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Vol. V

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933.

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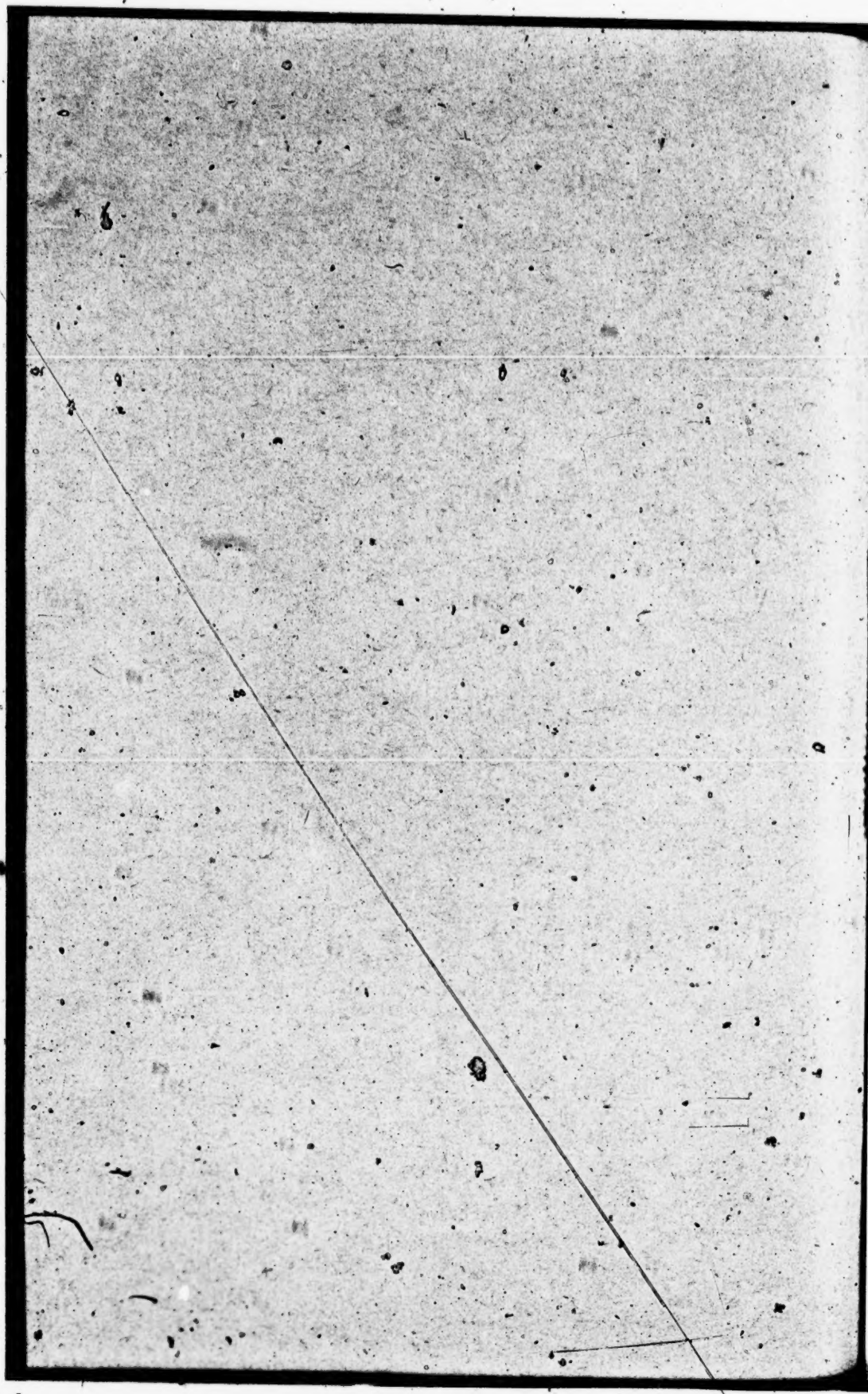

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APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

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[fol. 3237] EXHIBIT A-196

Employees' Stock Plan

1. The regular schedules of payments for A. T. & T. Co. stock under the Employees' Stock Plan through deductions from pay, provide that payments will be completed as follows:

(a) For subscriptions at $130, each month up to December, 1932.

(b) For subscriptions at $150 with deductions of $4.00 per month, each month beginning with September, 1932.

(c) For subscriptions at $150 with deductions of $3.00 per month, each month beginning with July, 1933.

2. The price in each case is made of two items,—amounts deducted from pay, and interest on the amounts deducted, as follows:

(a) $130 rate: $115.75 deductions and $14.25 interest.

(b) $150 rate with deductions of $4.00 per month: $137.11 deductions and $12.89 interest.

(c) $150 rate with deductions of $3.00 per month: $133.77 deductions and $16.23 interest.

3. When a subscription is cancelled by an employee at any time, the entire amount deducted from pay up to that time is refunded, and also interest on the amounts deducted, but at a slightly smaller rate per annum.

4. When a subscription is cancelled by an employee after all schedule deductions have been made, which can be done by filing a request for cancellation with the immediate supervisor on or before the last day of the month of final deduction, the cash refund value of a one share subscription would be as follows:

(a) $130 rate: $115.75 deductions, $11.47 interest, total $127.22.

(b) $150 rate with deductions of $4.00 per month: $137.11 deductions, $10.05 interest, total $147.16.

(c) $150 rate with deductions of $3.00 per month: $133.77 deductions, $12.79 interest, total $146.56.

5. When A. T. & T. Co. stock can be purchased outside the Plan (through the Bell Telephone Securities Co. or an investment house) at a price which is less than the total refund value stated in paragraph 4 for the subscription involved, it is to the immediate financial advantage of an employee who is about to complete payments on a subscription under the Plan, to cancel such subscription and use the amount refunded to buy through the other channel.

6. However, stock bought under the Plan has one privilege not attaching to other stock; the dividends received from it may be used in purchasing additional stock under the conditions set out in the Plan. The future value and importance of this privilege will necessarily vary in the minds of different individuals. Each one will have to arrive at a personal decision on this point, but everyone will wish to give consideration to it in reaching a conclusion as to whether they will cancel their contract and purchase stock at the market price outside of the Plan or complete their subscriptions and receive stock under the Plan.

7. Neither this Company nor the A. T. & T. Co. is suggesting how employees should treat their existing subscriptions under the Plan. The facts and figures have been set up to help you arrive at your decision. Figures are given on the basis of subscriptions upon which all schedule deductions have been completed, to indicate the price at which a purchase outside the Plan might be advantageous, but it is not intended to suggest that subscriptions be continued to that point if an employee feels at any time that the price at which stock can be bought outside the Plan justifies the use of the accumulated credits under the Plan for the outside purchase. No employee's standing in the Company is affected in any manner by action taken regarding subscriptions under the Plan.

8. If you want more information or help, your immediate supervisor will give it, or will obtain it for you. Forms upon which to request the treatment you wish, both in cancelling subscriptions under the Plan and in purchasing through the Bell Telephone Securities Co. may be obtained from your immediate supervisor.

(Here follows pages 3238, 3239, 3240 and Exhibits A-198, 199, 200, 201—pages 3241-3244)

EXHIBIT A-197 3238

STOCK

OF THE

AMERICAN TELEPHONE

AND

TELEGRAPH COMPANY

May be purchased under either a cash or a monthly payment plan

BELL TELEPHONE SECURITIES COMPANY
INCORPORATED
195 BROADWAY NEW YORK, N. Y.

Terms of Purchase

APPLICATION

Application must be made on the blank attached hereto and payments must be made through the *local Bell Telephone business office.*

Applications shall be limited to the number of shares that the Securities Company may from time to time determine.

(Over)

Exchange/Section

Division

Department

Taken by

PRICE

The price per share is the price at which the last sale is made on the New York Stock Exchange on the business day immediately following the day on which the application is received plus a small amount equal to brokerage charges.

CASH PLAN

Stock must be paid for in full and payment of the approximate amount of the purchase price must accompany the application.

MONTHLY PAYMENT PLAN

The first payment, which must accompany the application, shall be not less than $50.00 per share and subsequent monthly payments shall be $10.00 or any multiple thereof per share. The applicant's account will be charged with the cost of the stock at the price at which the application is accepted and will be credited with installment payments made by the applicant and, at the time of final payment, with an amount equivalent to the dividends to which the shares have been entitled. Interest on monthly unpaid balances at the rate of 6% per annum will be charged to the applicant's account at the time of final payment, monthly installment payments received on or before the 5th of a month being treated as paid on the first day of the month and those received after the 5th of the month as paid on the first day of the following month. Any rights which may attach to the shares being paid for will be sold by the Company and each applicant's account credited with the proceeds of such rights at the average price received by the Company for the rights attaching to all the shares of all applicants.

The applicant will, upon written request, be granted one extension of monthly payments of not exceeding two months, provided at least $90.00 per share shall have been paid. The applicant may at any time take up any or all of the shares applied for by a payment of the balance due.

At any time prior to the final payment, the applicant may elect by written notice to have his agreement cancelled as to any or all shares applied for, in which case an appropriate adjustment for interest and dividends applicable to the shares cancelled will be made and his account will be credited for the shares cancelled at the purchase price, but in case this is higher than the last sale price on the New York Stock Exchange on the date of cancellation the difference will be charged to the applicant's account. In case of cancellation as to all shares, the account will be closed and settlement made forthwith. In case of cancellation as to part of the shares, settlement will be made with respect to the shares cancelled.

The Securities Company reserves the right to reject any application under either plan, or to accept it for a lesser number of shares; to withdraw this offer at any time without notice; and to cancel the application, with refund under the above terms, in case of an unadjusted difference with the applicant or if a monthly payment is not received within one month after it is due.

BELL TELEPHONE SECURITIES COMPANY

Dated, New York City, July 1, 1931

TS 301 (3-32)

APPLICATION FOR STOCK OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY

Dated _____, 193__

To BELL TELEPHONE SECURITIES COMPANY:

I hereby apply for shares of the stock of the American Telephone and Telegraph Company, in accordance with the terms of your offer of July 1, 1931 as follows:

_____ SHARES PLAN "A" { CASH PLAN—Approximate payment in full to accompany the application; difference between this payment and cost of stock to be refunded or collected before delivery of certificate.

_____ SHARES PLAN "B" { MONTHLY PAYMENT PLAN—First payment of not less than $50 per share to accompany application; subsequent monthly installments to be $10 or any multiple thereof per share, a total of $_____ monthly; an adjustment for dividends and interest charges to be made in connection with final payment.

It is understood that you may reject this application or accept it for a lesser number of shares, and that having accepted it, you will advise me promptly of the price.

Total amount of payment made on account of this application $_____

_____
SIGNATURE of applicant (give first or middle name in full; if a woman, indicate whether "Miss" or "Mrs.")

Applicant also please PRINT name in this space

Applicant's Address to which Stock Certificate and Notices shall be mailed:

_____
Street and Number City or Town State

Applicant's Occupation _____ Applicant's Telephone Number _____

Date of Acceptance _____ Number of Shares _____ Price per Share $ _____

3240

[fol. 3241]

EXHIBIT A-198

American Telephone and Telegraph Company

Statement of (a) License Contract, Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which should be Considered on the Assumption that Amer[redacted]d Telegraph Compa[illegible] a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929		[illegible]931	Total [illegible] 1931 Inclu[illegible]
A. License Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,02[redacted]	[illegible]8,361	$205,418,[illegible]
B. Costs Incurred in Rendering License Contract Services (Exhibit A-170) less amounts which have been allocated to Long Lines Department (American Company)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,[illegible]
C. (A) less (B) Above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,[illegible]
D. Deduct additional amounts as follows:										
(1) Amount by which Pension Accruals for General Department of American Company during 1923-1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	.....	.....	.....	.....	.....	425,[illegible]
(2) Fair allowance for telephone instruments (Exhibit A-) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	.....	.....	.....	.....	13,335,9
Total	$2,409,352	$2,815,960	$3,074,921	$3,006,323	$2,454,998	.....	.....	.....	.....	$13,761,[illegible]
E. Net Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,6

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American [illegible]ompany to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of Transcript.)

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services, including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

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EXHIBIT A-198

American Telephone and Telegraph Company

nent of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
nse Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,361	$205,418,233
sts Incurred in Rendering License Contract Services (Exhibit A-170) less ounts which have been allocated to Long Lines Department (American Company)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,279
Less (B) Above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,046*
duct additional amounts as follows:										
Amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	.....	.....	.....	.....	.....	425,587
Fair allowance for telephone instruments (Exhibit A–) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	.....	.....	.....	.....	13,335,967
Total	$2,409,352	$2,815,960	$3,074,921	$3,006,323	$2,454,998	.....	.....	.....	.....	$13,761,554
Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,600*

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,[illegible]0,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of Transcript.)

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services, including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

[fol. 3242]

EXHIBIT A-199

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which Should be Considered on the Assumption that American Telephone and Telegraph Company may not Obtain any Profit from its Relations with Associated Companies and that Sums which it may Charge to Them for Services are Restricted to the Cost Thereof, But Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
A. License Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,38
B. Costs Incurred in Rendering License Contract Services (Exhibit A-170) less amounts which have been allocated to Long Lines Department (American Company)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,4
C. (A) less (B) above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,0
D. Deduct additional amounts as follows:									
(1) Amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	.....	.....	.....	.....	.....
(2) Fair allowance for telephone instruments (Exhibit A-) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	.....	.....	.....	.....
Total	2,409,352	2,815,960	3,074,921	3,006,323	2,454,998	.....	.....	.....	.....
E. Net Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,0

(Each of the seven lines above is identical with the lines A to E on Sheet 1)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.
(Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patent acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit A-169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923-1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923—1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds"-wherever that rate was used in determining costs. (Same as on Sheet 1)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. Cost (net) of "Temporary Financing" the annual amounts included in Exhibit A-170 for the period 1923–1931, inclusive, no part of which was allocated to Chicago Area in Exhibit A-170 are as follows	$1,535,913	$2,260,603	$2,606,279	$2,095,365	$1,839,609	$1,051,430	$2,452,536	$1,137,456	$1,709,528
2. A reasonable portion only of the royalties received by the American Company for the use of its patents in "non-telephone" fields. The total of all royalties and license fees received by the Company annually during the period 1923–1931, inclusive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,535

* Red figures.

EXHIBIT A-199

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which Should be Considered on the Assumption that American Telephone and Telegraph Company may not Obtain any Profit from its Relations with Associated Companies and that Sums which it may Charge to Them for Services are Restricted to the Cost Thereof, But Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
evenues received from Associated Companies and Bell Tele- Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,361	$205,418,233
Rendering License Contract Services (Exhibit A-170) less ve been allocated to Long Lines Department (American Com-	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,279
	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,046
amounts as follows:										
hich Pension Accruals for General Department of American ing 1923–1926, inclusive, exceed actual disbursements for hts A-178 and A-177)	76,716	96,825	117,091	134,955	.....	.....	.....	.....	.....	425,587
for telephone instruments (Exhibit A-) less costs already n B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,880	2,871,368	2,454,998	.....	.....	.....	.....	13,335,967
	2,409,352	2,815,960	3,074,921	3,006,323	2,454,998	.....	.....	.....	.....	13,761,554
ue Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,600*

(Each of the seven lines above is identical with the lines A to E on Sheet 1)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800.

*Portion of total amount of $30,395,800 credited to "Reserve for Contingencies" in 1927.
(Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patent acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit A-169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923-1931, inclusive);
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923—1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
ctary Financing" the annual amounts included in Exhibit 23–1931, inclusive, no part of which was allocated to Chicago are as follows	$1,535,913	$2,260,603	$2,606,279	$2,095,365	$1,839,609	$1,051,430	$2,452,536	$1,137,450	$1,709,528	$16,688,713
only of the royalties received by the American Company its in "non-telephone" fields. The total of all royalties and by the Company annually during the period 1923–1931,	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

[fol. 3243]

EXHIBIT A-200

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	1930	19
A. License Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$9
B. Costs Incurred in Rendering License Contract Services to Chicago Area (Exhibit A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,2
C. (A) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	3
D. Deduct additional amounts as follows:									
(1) Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	.....	.....	.....	.....	.....
(2) Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474	.....	.....	.....	.....
Total	150,688	177,674	188,329	181,176	154,474	.....	.....	.....	.....
E. Net Balance—License Revenues less Costs and Deductions shown above—Chicago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$3

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect to these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of minutes).

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

EXHIBIT A-200

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	192	1929	1930	1931	Total 1923–1931 Inclusive
venues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652	$13,528,977
ndering License Contract Services to Chicago Area (Ex-	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878	12,018,411
	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*	1,510,566
ounts as follows:										
d to Chicago Area of amount by which Pension Accruals for ment of American Company during 1923–1926, inclusive, bursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502						27,139
for telephone instruments in Chicago Area (Exhibit A-163) ly included in Item B above (the costs shown on Exhibit	145,625	171,477	180,952	172,674	154,474					825,202
	150,688	177,674	188,329	181,176	154,474					852,341
e Revenues less Costs and Deductions shown above—Chicago	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*	$658,225

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect to these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of minutes).

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

[fol. 3244]

EXHIBIT A-201

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company May Not Obtain any Profit from Its Relations with Associated Companies and that Sums which It May Charge to Them for Services are Restricted to the Cost Thereof, but Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
A. License Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652
B. Costs Incurred in Rendering License Contract Services to Chicago Area (Exhibit A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878
C. (A) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*
D. Deduct additional amounts as follows:									
(1) Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	.....	.....	.....	.....	.....
(2) Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474	.....	.....	.....	.....
Total	150,688	177,674	188,329	181,176	154,474	.....	.....	.....	.....
E. Net Balance—License Revenues less Costs and Deductions shown above—Chicago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*

(Each of the seven lines above is identical with the lines A to E on Sheet 1.)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect of these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927. (Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patents acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent. during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit 169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923–1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923–1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1.)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. A reasonable portion only of the royalties received by the American Company for the use of its patents in "non-telephone" fields. The total of all royalties and license fees received by the Company annually during the period 1923–1931, inclusive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555

* Red figures.

EXHIBIT A-201

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company May Not Obtain any Profit from Its Relations with Associated Companies and that Sums which It May Charge to Them for Services are Restricted to the Cost Thereof, but Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
nse Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652	$13,528,977
ts Incurred in Rendering License Contract Services to Chicago Area (Exhibit A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878	12,018,411
) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*	1,510,566
duct additional amounts as follows:										
Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	.....	.....	.....	.....	.....	27,139
Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474	.....	.....	.....	.....	825,202
Total	150,688	177,674	188,329	181,176	154,474	.....	.....	.....	.....	852,341
t Balance—License Revenues less Costs and Deductions shown above—icago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*	$658,225

(Each of the seven lines above is identical with the lines A to E on Sheet 1.)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect of these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927. (Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patents acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit 169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923–1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923–1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1.)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
sonable portion only of the royalties received by the American Company e use of its patents in "non-telephone" fields. The total of all royalties license fees received by the Company annually during the period 1923–1931, ive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

* Red figures.

[fol. 3245]

EXHIBIT A-202

American Telephone and Telegraph Company

Instrument Credit—Bell System

	1923	1924	1925	1926	1927
1. Average Current Cost	$36,712,948	$42,095,239	$46,392,461	$48,421,792	$46,937,162
2. Actual Depreciation (8% of Item 1)	2,937,036	3,367,619	3,711,397	3,873,743	3,754,973
3. Current Cost less 8% Depreciation (Item 1 less Item 2)	33,775,912	38,727,620	42,681,064	44,548,049	43,182,189
4. Depreciation Expense—7% of Current Cost (Item 1)	2,569,906	2,946,667	3,247,472	3,389,525	3,285,601
5. Return on Current Cost less 8% Depreciation (8% of Item 3)	2,702,073	3,098,210	3,414,485	3,563,844	3,454,575
6. Total, Items 4 and 5	5,271,979	6,044,877	6,661,957	6,953,369	6,740,176
7. Margin for Additional Instruments (6% of Item 6)	316,319	362,693	399,717	417,202	404,411
8. Instrument Repairs	1,086,422	1,328,873	1,613,737	2,033,810	2,066,815
9. Total, Items 6, 7 and 8	6,674,720	7,736,443	8,675,411	9,404,381	9,211,402

(Here follow pages 1, 2 and 3 of Exhibit A-203, side folios 3246, 3247 and 3248)

[fol. 3246]

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1923			1924			1925		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$5,787,340	$6,173,549	.94	$6,794,925	$7,098,730	.96	$8,082,879	$8,673,599	.93
Southern New England Tel. Co.	1,391,395	1,357,969	1.02	1,501,494	1,479,294	1.02	1,707,844	1,694,446	1.01
New York Tel. Co.	15,976,295	15,942,049	1.00	19,635,413	19,203,205	1.02	24,001,067	23,894,961	1.00
Bell Tel. Co. of Pennsylvania	5,881,387	6,405,099	.91	7,227,318	7,603,731	.95	8,705,496	9,384,191	.93
Ches. & Pot. Tel. Co.	740,835	694,847	1.07	739,331	715,905	1.03	812,628	805,502	1.01
Ches. & Pot. Tel. Co. of Balto. City	1,059,977	1,166,828	.91	1,232,086	1,303,525	.95	1,408,449	1,523,026	.92
Ches. & Pot. Tel. Co. of Virginia	692,279	761,008	.91	743,779	784,801	.95	809,082	866,152	.93
Ches. & Pot. Tel. Co. of West Va.	557,730	569,817	.98	616,598	601,240	1.03	694,218	684,710	1.01
Southern Bell Tel. & Tel. Co.	4,586,168	4,823,047	.95	5,227,119	5,233,989	1.00	6,204,585	6,345,277	.98
Ohio Bell Tel. Co.	3,918,091	3,957,653	.99	4,162,465	4,079,087	1.02	4,536,506	4,393,619	1.03
Cincinnati & Suburban Bell Tel. Co.	946,427	828,258	1.14	880,672	884,846	1.00	1,035,107	1,032,406	1.00
Michigan Bell Tel. Co.	2,844,322	2,868,576	.99	3,349,276	3,338,964	1.00	3,848,673	3,822,060	1.01
Indiana Bell Tel. Co.	1,357,205	1,596,850	.85	1,731,633	1,641,519	1.05	1,776,886	1,717,406	1.03
Wisconsin Tel. Co.	1,232,707	1,409,469	.87	1,391,256	1,526,314	.91	1,582,916	1,770,028	.89
Northwestern Bell Tel. Co.	3,552,749	3,830,336	.93	3,733,939	3,818,464	.98	3,876,713	4,013,941	.97
Southwestern Bell Tel. Co.	5,627,814	6,209,645	.91	6,124,393	6,498,532	.94	6,714,918	7,012,032	.96
Mountain States Tel. & Tel. Co.	2,369,343	2,534,940	.93	2,448,960	2,478,419	.99	2,644,744	2,628,994	1.01
Pacific System Excl. So. Cal.	5,858,788	5,944,624	.99	6,587,711	6,654,214	.99	7,704,528	7,748,590	.99
Southern California Tel. Co.	1,933,315	2,082,315	.93	2,610,746	2,659,397	.98	3,314,331	3,352,113	.99
Associated Operating Companies Less Illinois Co.	66,264,167	69,156,879	.96	76,739,114	77,604,176	.99	89,461,570	91,363,053	.98

...ing Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1923			1924			1925		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$5,787,340	$6,173,549	.94	$6,794,925	$7,098,730	.96	$8,082,879	$8,673,599	.93
Southern New England Tel. Co.	1,391,395	1,357,969	1.02	1,501,494	1,479,294	1.02	1,707,844	1,694,446	1.01
New York Tel. Co.	15,976,295	15,942,049	1.00	19,635,413	19,203,205	1.02	24,001,067	23,894,961	1.00
Bell Tel. Co. of Pennsylvania	5,831,387	6,405,099	.91	7,227,318	7,603,731	.95	8,705,496	9,384,191	.93
Ches. & Pot. Tel. Co.	740,835	694,847	1.07	739,331	715,905	1.03	812,628	805,502	1.01
Ches. & Pot. Tel. Co. of Balto. City	1,059,977	1,166,828	.91	1,232,086	1,303,525	.95	1,408,449	1,523,026	.92
Ches. & Pot. Tel. Co. of Virginia	692,279	761,008	.91	743,779	784,801	.95	809,082	866,152	.93
Ches. & Pot. Tel. Co. of West Va.	557,730	569,817	.98	616,598	601,240	1.03	694,218	684,710	1.01
Southern Bell Tel. & Tel. Co.	4,586,168	4,823,047	.95	5,227,119	5,233,989	1.00	6,204,585	6,345,277	.98
Ohio Bell Tel. Co.	3,918,091	3,957,653	.99	4,162,465	4,079,087	1.02	4,536,506	4,393,619	1.03
Cincinnati & Suburban Bell Tel. Co.	946,427	828,258	1.14	880,672	884,846	1.00	1,035,107	1,032,406	1.00
Michigan Bell Tel. Co.	2,844,322	2,868,576	.99	3,349,276	3,338,964	1.00	3,848,673	3,822,060	1.01
Indiana Bell Tel. Co.	1,357,205	1,596,850	.85	1,731,633	1,641,519	1.05	1,776,886	1,717,406	1.03
Wisconsin Tel. Co.	1,232,707	1,409,469	.87	1,391,256	1,526,314	.91	1,582,916	1,770,028	.89
Northwestern Bell Tel. Co.	3,552,749	3,830,336	.93	3,733,939	3,818,464	.98	3,876,713	4,013,941	.97
Southwestern Bell Tel. Co.	5,627,814	6,209,645	.91	6,124,393	6,498,532	.94	6,714,918	7,012,032	.96
Mountain States Tel. & Tel. Co.	2,369,343	2,534,940	.93	2,448,960	2,478,419	.99	2,644,744	2,628,994	1.01
Pacific System Excl. So. Cal.	5,858,788	5,944,624	.99	6,587,711	6,654,214	.99	7,704,528	7,748,590	.99
Southern California Tel. Co.	1,933,315	2,082,315	.93	2,610,746	2,659,397	.98	3,314,331	3,352,113	.99
Associated Operating Companies Less Illinois Co.	66,264,167	69,156,879	.96	76,739,114	77,604,176	.99	89,461,570	91,363,053	.98

[fol. 3247]

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1926			1927			1928		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	.....	.....	....	.....	.....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

EXHIBIT A-202

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1926			1927			1928		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	.....	.....	....	.....	.....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

[fol. 3248]

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1929			1930			1931		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$10,435,971	$10,886,588	.96	$11,135,457	$11,834,966	.94	$11,811,243	$12,622,868	.94
Southern New England Tel. Co.	2,477,388	2,384,402	1.04	2,725,580	2,740,073	.99	2,929,204	2,969,756	.99
New York Tel. Co.	28,652,469	27,936,916	1.03	31,044,389	30,664,672	1.01	32,962,742	32,547,369	1.01
New Jersey Bell Tel. Co.	6,722,533	6,717,668	1.00	7,271,346	7,481,284	.97	7,915,298	8,082,274	.98
Bell Tel. Co. of Pennsylvania	11,575,721	11,095,821	1.04	12,648,036	12,514,498	1.01	13,454,709	13,254,681	1.02
Ches. & Pot. Tel. Co.	1,200,812	1,199,514	1.00	1,283,400	1,307,701	.98	1,346,125	1,368,267	.98
Ches. & Pot. Tel. Co. of Balto. City	2,077,534	1,975,121	1.05	2,179,127	2,126,286	1.02	2,271,171	2,223,346	1.02
Ches. & Pot. Tel. Co. of Virginia	1,112,588	1,074,876	1.04	1,234,463	1,237,815	1.00	1,311,644	1,323,760	.99
Ches. & Pot. Tel. Co. of West Va.	978,048	917,563	1.07	1,037,274	1,014,347	1.02	1,066,527	1,039,269	1.03
Southern Bell Tel. & Tel. Co.	10,203,100	9,166,827	1.11	10,888,935	10,305,525	1.06	11,170,128	10,587,967	1.05
Ohio Bell Tel. Co.	7,669,752	6,216,878	1.23	8,436,461	7,128,982	1.18	8,793,777	7,307,672	1.20
Cincinnati & Suburban Bell Tel. Co.	1,505,726	1,409,811	1.07	1,611,024	1,522,184	1.06	1,747,084	1,703,711	1.03
Michigan Bell Tel. Co.	7,581,165	6,591,428	1.15	8,565,149	7,613,953	1.12	8,702,483	7,920,800	1.10
Indiana Bell Tel. Co.	2,095,189	1,768,177	1.18	2,250,932	2,042,106	1.10	2,253,296	2,124,520	1.06
Wisconsin Tel. Co.	2,299,146	2,446,176	.94	2,641,358	2,926,513	.90	3,028,122	3,197,114	.95
Northwestern Bell Tel. Co.	4,814,312	4,833,736	1.00	5,211,572	5,416,882	.96	5,519,047	5,740,828	.96
Southwestern Bell Tel. Co.	14,137,395	12,416,053	1.14	15,259,177	14,088,025	1.08	16,052,165	14,719,653	1.09
Mountain States Tel. & Tel. Co.	3,588,007	3,369,177	1.06	3,808,792	3,844,675	.99	3,934,124	4,064,018	.97
Pacific System Excl. So. Cal.	10,946,257	11,350,875	.96	11,405,494	11,227,213	1.02	11,843,062	11,724,292	1.01
Southern California Tel. Co.	4,681,939	4,126,155	1.13	7,324,340	6,699,644	1.09	7,558,134	7,175,258	1.05

	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	.....	.....	....	.....	.....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

[fol. 3248]

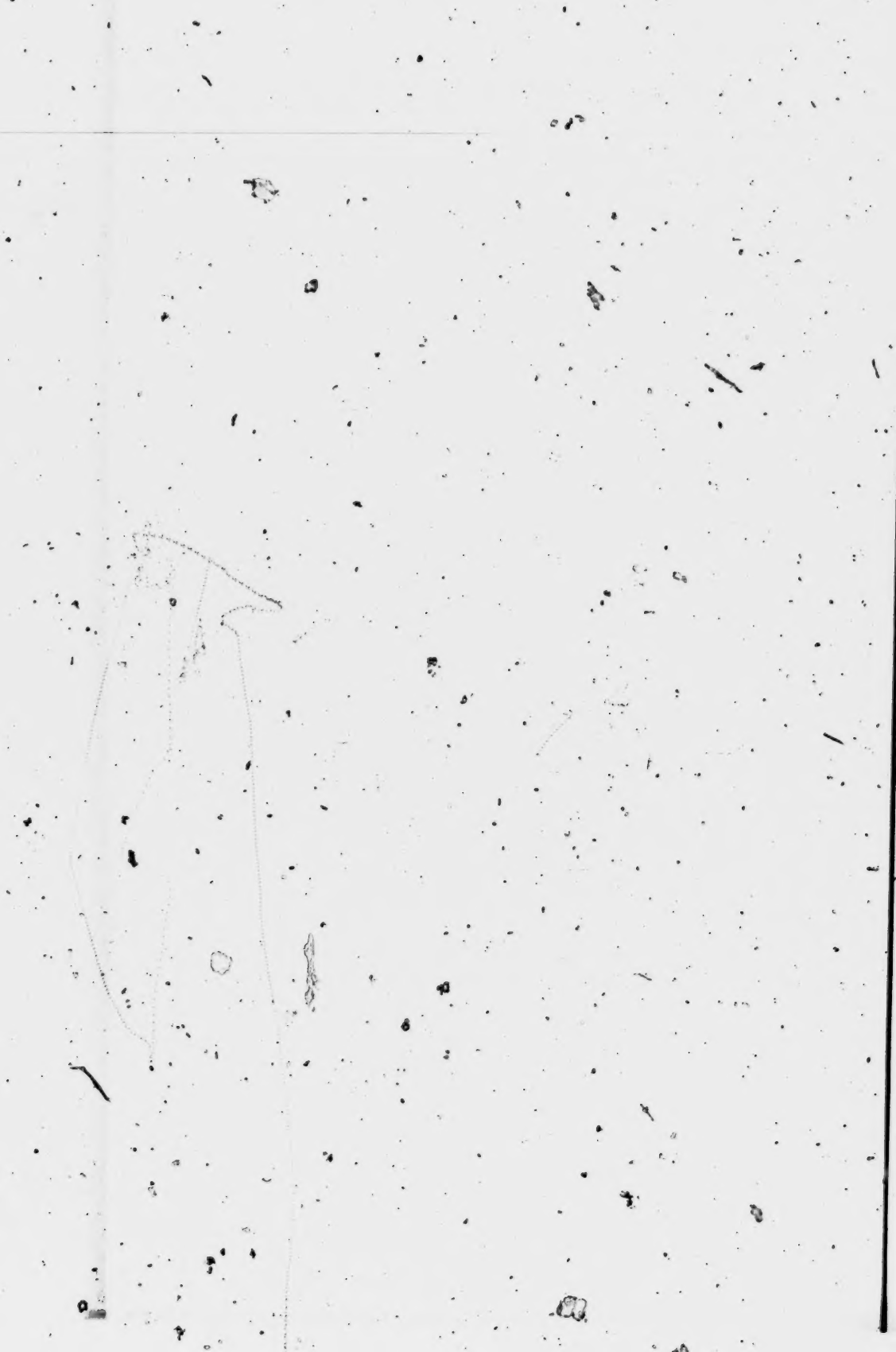
EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1929			1930			1931		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$10,435,971	$10,886,588	.96	$11,135,457	$11,834,966	.94	$11,811,243	$12,622,868	.94
Southern New England Tel. Co.	2,477,388	2,384,402	1.04	2,725,580	2,740,073	.99	2,929,204	2,969,756	.99
New York Tel. Co.	28,652,469	27,936,916	1.03	31,044,389	30,664,672	1.01	32,962,742	32,547,369	1.01
New Jersey Bell Tel. Co.	6,722,533	6,717,668	1.00	7,271,346	7,481,284	.97	7,915,298	8,082,274	.98
Bell Tel. Co. of Pennsylvania	11,575,721	11,095,821	1.04	12,648,036	12,514,498	1.01	13,454,709	13,254,681	1.02
Ches. & Pot. Tel. Co.	1,200,812	1,199,514	1.00	1,283,400	1,307,701	.98	1,346,125	1,368,267	.98
Ches. & Pot. Tel. Co. of Balto. City	2,077,534	1,975,121	1.05	2,179,127	2,126,286	1.02	2,271,171	2,223,346	1.02
Ches. & Pot. Tel. Co. of Virginia	1,112,588	1,074,876	1.04	1,234,463	1,237,815	1.00	1,311,844	1,323,760	.99
Ches. & Pot. Tel. Co. of West Va.	978,048	917,563	1.07	1,037,274	1,014,347	1.02	1,066,527	1,039,269	1.03
Southern Bell Tel. & Tel. Co.	10,203,100	9,166,827	1.11	10,888,935	10,305,525	1.06	11,170,128	10,587,967	1.05
Ohio Bell Tel. Co.	7,669,752	6,216,878	1.23	8,436,461	7,128,982	1.18	8,793,777	7,307,672	1.20
Cincinnati & Suburban Bell Tel. Co.	1,505,726	1,409,811	1.07	1,611,024	1,522,184	1.06	1,747,084	1,703,711	1.03
Michigan Bell Tel. Co.	7,581,165	6,591,428	1.15	8,565,149	7,613,953	1.12	8,702,483	7,920,800	1.10
Indiana Bell Tel. Co.	2,095,189	1,768,177	1.18	2,250,932	2,042,106	1.10	2,253,296	2,124,520	1.06
Wisconsin Tel. Co.	2,299,146	2,446,176	.94	2,641,358	2,926,513	.90	3,028,122	3,197,114	.95
Northwestern Bell Tel. Co.	4,814,312	4,833,736	1.00	5,211,572	5,416,882	.96	5,519,047	5,740,828	.96
Southwestern Bell Tel. Co.	14,137,395	12,416,053	1.14	15,259,177	14,088,025	1.08	16,052,165	14,719,653	1.09
Mountain States Tel. & Tel. Co.	3,588,007	3,369,177	1.06	3,808,792	3,844,675	.99	3,934,124	4,064,018	.97
Pacific System Excl. So. Cal.	10,946,257	11,350,875	.96	11,405,494	11,227,213	1.02	11,843,062	11,724,292	1.01
Southern California Tel. Co.	4,681,939	4,126,155	1.13	7,324,340	6,699,644	1.09	7,558,134	7,175,258	1.05
Associated Operating Companies Less Illinois Co.	134,755,052	127,883,762	1.05	147,962,306	143,737,344	1.03	155,670,085	151,697,423	1.03



[fol. 3249] Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment", with Amounts based on Chicago Depreciation Rates.

(Omitting Charges for Station Installations, Interior Block Wires, and Exchange Aerial Wire)

	1923–1931		
	Actual Charges To Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$81,604,639	$88,011,596	.93
Southern New England Tel. Co.	18,913,921	18,823,426	1.00
New York Tel. Co.	235,549,207	232,287,236	1.01
New Jersey Bell Tel. Co.	28,022,205	28,340,356	.99
Bell Tel. Co. of Pennsylvania.	89,932,331	92,816,284	.97
Ches. & Pot. Tel. Co.	9,112,197	9,157,951	1.00
Ches. & Pot. Tel. Co. of Balto. City	15,403,152	15,763,087	.98
Ches. & Pot. Tel. Co. of Virginia	8,727,729	8,981,616	.97
Ches. & Pot. Tel. Co. of West Va.	7,512,962	7,315,201	1.03
Southern Bell Tel. & Tel. Co.	72,492,530	70,657,544	1.03
Ohio Bell Tel. Co.	54,428,780	49,027,753	1.11
Cincinnati & Suburban Bell Tel. Co.	11,461,982	10,994,236	1.04
Michigan Bell Tel. Co.	51,152,248	47,874,524	1.07
Indiana Bell Tel. Co.	17,032,050	16,196,560	1.05
Wisconsin Tel. Co.	17,899,220	19,527,621	.92
Northwestern Bell Tel. Co.	39,643,443	40,687,278	.97
Southwestern Bell Tel. Co.	95,943,264	92,131,260	1.04
Mountain States Tel. & Tel. Co.	27,671,676	27,673,143	1.00
Pacific System Exel, So. Cal.	81,106,596	83,528,714	.97
Southern California Tel. Co.	39,683,809	38,188,641	1.04
Associated Operating Companies, Less Illinois Co.	1,003,293,941	997,987,027	1.01

[fol. 3250]

Associated Operating Companies

Amounts Included in Charges to Account 608 for Station Installations, Interior Block Wires, and Exchange Aerial Wire

	1923	1924	1925	1926	1927	1928	1929	1930	1931
New England Tel. & Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	1,067,000	1,166,000	1,283,000	1,397,000	1,305,000	1,255,000	199,000	222,000	256,000
Total	1,067,000	1,166,000	1,283,000	1,397,000	1,305,000	1,255,000	199,000	222,000	256,000
Southern New England Tel. Co.									
Station Installations				25,386	70,483	94,331			
Interior Block Wires									
Exchange Aerial Wire	225,528	216,961	229,398	239,403	238,998	228,595	146,318	142,457	141,031
Total	225,528	216,961	229,398	264,789	309,481	322,926	146,318	142,457	141,031
New York Tel. Co									
Station Installations	112,180	151,381	168,876	181,452	192,900	179,858			
Interior Block Wires	118,302	130,151	148,880	163,612	165,930	157,646	5,146	6,071	6,157
Exchange Aerial Wire	943,665	1,028,031	1,123,459	1,207,558	1,249,247	894,911	258,342	253,364	259,722
Total	1,174,147	1,309,563	1,441,215	1,552,622	1,608,077	1,232,415	263,488	259,435	265,879
New Jersey Bell Tel. Co.									
Station Installations						18,642			
Interior Block Wires									
Exchange Aerial Wire						552,829	180,904	262,575	204,299
Total						571,471	180,904	262,575	204,299
Bell Tel. Co. of Pennsylvania									
Station Installations									
Interior Block Wires	51,474	54,254	58,435	59,481					
Exchange Aerial Wire	916,568	987,077	964,133	945,973	842,277	756,342	254,071	297,501	299,000
Total	968,042	1,041,331	1,022,568	1,005,454	842,277	756,342	254,071	297,501	299,000

Chesapeake & Potomac Tel. Co.									
Station Installations	.....	2,495	2,634	2,772	2,944	3,082	.....	.....	.....
Interior Block Wires	.....	1,052	1,068	1,069	1,068	986	.....	.....	.....
Exchange Aerial Wire	26,879	26,566	28,031	27,845	26,775	25,966	252	182	105
Total	26,879	30,113	31,733	31,686	30,787	30,034	252	182	105
Chesapeake & Potomac Tel. Co. of Balto City									
Station Installations	3,188	3,542	3,766	3,948	4,041	4,056	.....	.....	.....
Interior Block Wires	2,151	2,209	2,096	1,942	1,893	1,741	.....	.....	.....
Exchange Aerial Wire	175,188	190,187	199,913	203,610	206,175	200,524	129,875	131,632	135,591
Total	180,527	195,938	205,775	209,500	212,109	206,321	129,875	131,632	135,591
Chesapeake & Potomac Tel. Co. of Virginia									
Station Installations	1,841	1,958	2,036	2,061	2,094	2,162	.....	.....	.....
Interior Block Wires	450	437	432	437	461	480	.....	.....	.....
Exchange Aerial Wire	93,353	95,407	98,097	99,268	98,807	98,410	59,144	61,990	65,626
Total	95,644	97,802	100,565	101,766	101,362	101,052	59,144	61,990	65,626
Chesapeake & Potomac Tel. Co. of W. Va.									
Station Installations	1,705	1,780	1,824	1,870	1,936	1,994	.....	.....	.....
Interior Block Wires	485	505	512	513	533	560	.....	.....	.....
Exchange Aerial Wire	87,123	93,122	97,836	98,437	99,485	101,452	60,104	61,984	64,140
Total	89,313	95,407	100,172	100,820	101,954	104,006	60,104	61,984	64,140
Southern Bell Tel. & Tel. Co.									
Station Installations	.....	.....	.....	4,501	18,731	19,850	.....	.....	.....
Interior Block Wires	.....	.....	.....	705	2,949	2,969	.....	.....	.....
Exchange Aerial Wire	530,908	525,434	558,340	555,878	468,355	495,085	369,242	392,812	400,752
Total	530,908	525,434	558,340	561,084	490,035	517,904	369,242	392,812	400,752

[fol. 3251]

Associated Operating Companies

Amounts Included in Charges to Account 608 for Station Installations, Interior Block Wires, and Exchange Aerial Wire

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Ohio Bell Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	543,818	540,143	519,083	479,838	449,528	431,286	149,924	182,083	189,103
Total	543,818	540,143	519,083	479,838	449,528	431,286	149,924	182,083	189,103
Cincinnati & Suburban Bell Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	91,158	74,611	73,630	72,633	68,989	67,157	59,147	55,675	52,104
Total	91,158	74,611	73,630	72,633	68,989	67,157	59,147	55,675	52,104
Michigan Bell Tel. Co.									
Station Installations		11,792	25,071		21,019	22,324			
Interior Block Wires									
Exchange Aerial Wire	250,121	320,265	303,255	259,431	271,721	354,585	143,714	168,891	159,124
Total	250,121	332,057	328,326	259,431	292,740	376,909	143,714	168,891	159,124
Indiana Bell Tel. Co.									
Station Installations	8,044	10,038	10,148	10,327	6,814	7,026			
Interior Block Wires	751	966	1,024	1,024					
Exchange Aerial Wire	133,635	154,175	144,544	140,681	121,366	120,482	65,695	73,781	71,603
Total	142,430	165,179	155,716	152,032	128,180	127,508	65,695	73,781	71,603
Wisconsin Telephone Co.									
Station Installations	10,058	11,728	13,001	13,884	14,631	15,493			
Interior Block Wires	244	263	275	279	285	291			
Exchange Aerial Wire	213,362	237,905	260,066	272,200	281,050	287,736	98,418	102,150	66,743
Total	223,664	249,896	273,342	286,363	295,966	303,520	98,418	102,150	66,743

Northwestern Bell Tel. Co.									
Station Installations					9,176	9,416			
Interior Block Wires					799	836			
Exchange Aerial Wire	329,450	339,885	353,637	349,119	180,023	178,764	195,391	177,531	178,353
Total	329,450	339,885	353,637	349,119	189,998	189,016	195,391	177,531	178,353
Southwestern Bell Tel. Co.									
Station Installations	43,179	46,178	48,178	53,665	68,210	24,722			
Interior Block Wires	2,181	2,254	2,394	2,728	3,186	1,203			
Exchange Aerial Wire	449,526	477,925	528,810	553,550	663,589	734,673	291,185	356,671	358,452
Total	494,886	526,357	579,382	609,943	734,985	760,598	291,185	356,671	358,452
Mountain States Tel. & Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	264,116	272,653	280,474	293,873	296,823	272,773	152,773	155,950	157,288
Total	264,116	272,653	280,474	293,873	296,823	272,773	152,773	155,950	157,288
Pacific System Excl. So. Cal.									
Station Installations		23,388	24,886	26,812	29,472	31,410	33,156		
Interior Block Wires		2,093	2,248	2,441	2,865	3,263	3,819		
Exchange Aerial Wire	626,562	415,808	450,788	565,244	611,108	651,429	682,968	332,706	356,438
Total	626,562	441,289	477,922	594,497	643,445	686,102	719,943	332,706	356,438
Southern California Tel. Co.									
Station Installations		11,097	11,836	12,647	12,899	13,630	14,426		
Interior Block Wires		438	519	635	924	1,340	1,662		
Exchange Aerial Wire	156,135	98,719	109,714	135,889	79,329	81,503	82,673	162,552	167,366
Total	156,135	110,254	122,069	149,171	93,152	96,473	98,761	162,552	167,366

[fol. 3252] EXHIBIT A-205

Copy

Western Electric Company, Incorporated, and Illinois Bell Telephone Company

Standard Supply Contract, Dated June 2, 1930

[fol. 3253] Memorandum of Agreement dated June 2, 1930, between Western Electric Company, Incorporated, a corporation of the State of New York, hereinafter called the Electric Company, and Illinois Bell Telephone Company, a corporation of the State of Illinois, hereinafter called the Telephone Company. Witnesseth: That in consideration of the covenants and agreements herein contained, it is agreed by and between the parties hereto as follows:

Article I

Scope

1. Manufacture and Purchase of Materials:

The Electric Company will manufacture or purchase materials which the Telephone Company may reasonably require for its business and which it may order from the Electric Company; provided, however, that nothing herein contained obligates the Telephone Company to purchase any materials from the Electric Company.

2. Delivery of Materials:

The Electric Company will deliver said materials to the Telephone Company upon its written orders, in such quantities, in such manner, and at such times as the Telephone Company may reasonably designate.

[fol. 3254] 3. Inspection of Materials.

The Electric Company, as authorized by the Telephone Company, will make technical and engineering inspections of materials not of its own manufacture furnished by it to the Telephone Company.

4. Equipment Specifications and Installations.

The Electric Company will prepare such equipment specifications and perform such installations of materials as the Telephone Company may reasonably require for its business and may order from the Electric Company.

5. Distributing Storerooms.

The Electric Company will maintain distributing storerooms as at present established or at such points as from time to time may be agreed upon, for the distribution of materials to the Telephone Company.

6. Stocks of Materials.

(a) The Electric Company will exercise due diligence in maintaining at all times, at its distributing storerooms, reasonable stocks of materials, except apparatus which must be specially assembled for each job (such as central office switchboards) and other materials which are customarily shipped direct, such as poles and directories.

"Reasonable stocks" means such quantities as the Telephone Company may reasonably require for its business, giving due consideration to variations in demand, seasonal requirements, conditions of the market and length of time required to transport materials from the sources of supply to the Electric Company's distributing storerooms.

(b) The Electric Company will carry such special stocks of materials as the Telephone Company may authorize.

[fol. 3255] "Special stocks" means all stocks authorized by the Telephone Company other than or in excess of reasonable stocks.

7. Returned Materials.

The Electric Company will receive and classify any materials which the Telephone Company may return from time to time, delivered f. o. b. the Electric Company's distributing storerooms or other points designated by the Electric Company.

Such materials when received at the Electric Company's distributing storerooms shall be divided into classes: "A", "B", and "C" as defined below. Such classification shall be based on visual inspection by experienced storeroom employees and be subject to the approval of the Telephone Company. Such visual inspection is the only inspection

contemplated in the rates of remuneration specified in paragraph 4 Article II of this Agreement. Any electrical or mechanical inspection required by the Telephone Company on materials classified "C" by visual inspection, shall be considered as part of the repair work and performed under the terms of paragraph 6 (b) Article II of this Agreement.

Class "A".—Surplus used returned materials not presently required by the Telephone Company for its own use, for which the Electric Company has allowance prices and which can be repaired and sold by the Electric Company to other Bell System Companies shall be classified "A." The Electric Company will purchase such materials from the Telephone Company.

Class "B".—Returned materials which have no value except as junk shall be classified "B". Such materials shall, at the option of the Telephone Company, be shipped to the Electric Company's reclamation plants, or sold by the Electric Company. If advantageous for their eco- [fol. 3256] nomical disposition such materials shall be dismantled by the Electric Company at its distributing storerooms.

Class "C".—All other returned materials shall be classified "C". The Electric Company will credit the Telephone Company for, store, insure and carry the investment in such materials until reissued to the Telephone Company on its orders, or otherwise disposed of with its approval.

For insurance purposes, Class "C" materials shall be valued at fifty per cent (50%) of current value new and shall be insured by the Electric Company in accordance with its current insurance practice.

8. Transportation Charges.

The Electric Company as authorized by the Telephone Company and in so far as practicable will pay for the account of the Telephone Company such of the following transportation charges as under the Electric Company's prices and terms should be borne by the Telephone Company:

(a) On shipments of materials made hereunder to the Telephone Company.

(b) On shipments of materials returned from the Telephone Company to the Electric Company's distributing storerooms or other points designated by it.

(c) On shipments of Class "B" returned materials from the Electric Company's distributing storerooms to its reclamation plants or other points of disposition designated by the Electric Company.

The Electric Company will adjust claims with carriers arising out of shipments hereunder.

[fol. 3257] 9. Repairs to Materials.

The Electric Company will maintain repair shops as at present established or at such points as from time to time may be agreed upon and will make such repairs to returned materials as the Telephone Company may reasonably require.

10. Other Services.

The Electric Company will perform such other services as the Telephone Company may reasonably require from time to time.

Article II

Prices and Terms

1. General.

The Electric Company's prices and terms shall be as low as to its most favored customers for like materials and services under comparable conditions.

2. Materials, Equipment, Specifications and Installations.

The prices to be paid by the Telephone Company to the Electric Company for materials, equipment specifications and installations shall be those established from time to time by the Electric Company. Such prices in so far as practicable and any conditions affecting them not specifically provided for in this Article shall be included in the Electric Company's published price lists. Prices for materials shall include inspection provided for in paragraph 3 Article I of this Agreement.

[fol. 3258] 3. Carrying Special Stocks of Materials.

For carrying special stocks of materials the Telephone Company will pay the Electric Company monthly at the rate of eight per cent (8%) per annum on its average monthly investment in such stocks, beginning thirty (30) days after such materials have been placed in special stock.

4. Returned Materials.

Class "A" materials shall be credited to the Telephone Company at the Electric Company's allowance prices.

Class "B" materials which are shipped to the Electric Company's reclamation plants shall be credited to the Telephone Company at the Electric Company's allowance prices.

The allowance prices referred to above for Classes "A" and "B" materials shall be those established from time to time by the Electric Company. Such allowance prices in so far as practicable and any conditions affecting them not specifically provided for in this Article shall be included in the Electric Company's published price lists.

Class "B" materials which are not shipped to the Electric Company's reclamation plants shall be credited to the Telephone Company at the prices realized by the Electric Company from their sale, less remuneration for its services, other than dismantling, as follows:

Seven per cent (7%) of the amounts received by the Electric Company before deduction of transportation charges, where deliveries are made to the Electric Company's distributing storerooms.

One per cent (1%) of the amounts received by the Electric Company, before deduction of transportation charges, where deliveries are made direct to a destination designated by the Electric Company, other than its distributing storerooms.

[fol. 3259] In case Class "B" materials are dismantled by the Electric Company at its distributing storerooms, the Telephone Company will pay the Electric Company its costs of such dismantling, determined in accordance with paragraph 6 (b) of this Article.

Class "C" materials shall be credited to the Telephone Company at the Electric Company's current prices for corresponding new materials, except that major units of central office and multiple private branch exchange switch-

boards may be credited at valuations mutually agreed upon. When reissued all Class "C" materials shall be paid for by the Telephone Company at the prices at which credited.

The Telephone Company will pay the Electric Company for its services in connection with materials credited as Class "C" three and one-half per cent (3½%) of the amounts so credited and interest at a reasonable rate upon its investment in such materials; such interest to be billed monthly.

In case Class "C" materials are damaged or destroyed by fire, the Telephone Company will reimburse the Electric Company for the difference between the amounts recovered by the Electric Company on account of insurance carried and the amounts which were credited to the Telephone Company for such materials, and in addition, for any unbilled repairs to such materials.

5. Transportation Charges.

The Telephone Company will reimburse the Electric Company for transportation charges paid by it as provided for in paragraph 8 Article I of this Agreement.

[fol. 3260] 6. Repairs to Materials.

The Telephone Company will pay the Electric Company for repairs provided for in paragraph 9, Article I of this Agreement as follows:

(a) At established prices which shall be agreed upon from time to time in so far as practicable and in effect on date repairs are billed to the Telephone Company.

(b) For repairs not covered by established prices, at the Electric Company's costs thereof determined as follows:

Materials: At prices prescribed in paragraph 2 of this Article.

Direct Labor: At actual cost.

Indirect Labor, Local and General Expense: At rates applied to direct labor, which rates shall be agreed upon from time to time and shall be sufficient to cover such indirect labor and expense applicable to the operation of such distributing storeroom shops.

Interest on Investment: At a reasonable rate on the Electric Company's investment required to make such repairs.

7. Other Services.

The Telephone Company will pay the Electric Company for other services as provided for in paragraph 10, Article I of this Agreement as follows:

(a) At established prices which shall be agreed upon from time to time in so far as practicable.

(b) For such services not covered by established prices, [fol. 3261] at the Electric Company's costs thereof determined as follows:

Materials: At prices provided for in paragraph 2 of this Article.

Direct Labor: At actual cost.

Local and General Supervision: At twenty-five per cent (25%) of direct labor.

Expense Items: At actual cost.

Interest on Investment: At a reasonable rate on the Electric Company's investment required to perform such services.

8. Payment.

As of the first of every month the Electric Company will render monthly statements of account which shall be due and payable by the Telephone Company thirty days after date of such monthly statements. If payment is deferred, the account shall thereafter bear interest at a reasonable rate.

Article III

General Provisions.

1. Liability.

(a) The Electric Company shall be liable only for direct damages arising from failure to exercise reasonable care and diligence in performing its obligations hereunder.

(b) If any materials manufactured by the Electric Company shall prove to be defective or if any materials furnished by the Electric Company and inspected as provided for in paragraph 3 Article I of this Agreement shall prove to be not in accordance with the specifications, the Electric

Company, at the option of the Telephone Company, will ac-
[fol. 3262] cept the return of such materials and allow full credit therefor or replace the same at its own expense f. o. b. destination of the original shipment to the Telephone Company.

(c) In case the Telephone Company shall decide to abandon or reduce the use of or purchase from others any materials not of Electric Company manufacture or materials of Electric Company manufacture not standardized by the American Telephone and Telegraph Company, theretofore customarily purchased from the Electric Company, it will give the Electric Company reasonable notice of such intention and will reimburse the Electric Company for any loss on account of any reasonable stocks thereof on hand and any reasonable commitments made by the Electric Company prior to the receipt of such notice in anticipation of the Telephone Company's orders.

2. Cancellation of Prior Agreement.

This Agreement as of the date it becomes effective supersedes the Agreement between the parties hereto dated January 1, 1924, entitled "Standard Supply Contract" and all Agreements supplementary thereto.

3. Term of Agreement.

This Agreement shall become effective on the second day of June 1930, and shall continue in force until terminated by mutual consent or by one year's notice in writing from either party to the other, or by the termination of the license from the American Telephone and Telegraph Company to the Telephone Company or to the Electric Company.

[fol. 3263] In witness whereof the parties hereto have caused this Agreement to be executed by their respective officers thereunto duly authorized and their corporate seals to be hereunto affixed the day and year first above written.

Western Electric Company, Incorporated, by (Signed) Edgar S. Bloom, President. Attest: (Signed) H. B. Gilmore, Secretary. (Seal) Illinois Bell Telephone Company, by (Signed) W. R. Abbott, President. Attest: (Signed) A. R. Bone, Secretary. (Seal.)

[fol. 3264] EXHIBIT A-206

Copy

American Telephone and Telegraph Company, Executive Committee

December 5, 1928.

Resolved: That the President be authorized to offer to the several licensee companies under existing License Agreements to reduce, effective January 1, 1929, to one and one half per cent of their total gross earnings as defined in said License Agreements, the payments therein provided to be made by those companies to this Company; provided that this Company reserves the right to withdraw upon four months' notice in writing the reduction hereby authorized; and provided further that this action or any action pursuant hereto, shall not limit, impair, or in any way affect this Company's right under a like reservation that was made in connection with the reduction authorized by this Committee on November 16, 1927.

[fol. 3265] Copy

American Telephone and Telegraph Company

New York, December 11, 1928.

W. R. Abbott, President Illinois Bell Telephone Company, Chicago, Illinois.

DEAR MR. ABBOTT: The Executive Committee of this Company has authorized a reduction in the payment of the Associated Companies under the License Contract to one and one-half per cent of the gross earnings, effective as of January 1, 1929, subject to the right of this Company to withdraw this reduction upon four months' notice in writing. A copy of the resolution adopted by the Executive Committee is enclosed herewith.

As soon as your company takes the action necessary to accept this reduction, I shall appreciate your sending me a certified copy of your resolution.

Sincerely yours, (Signed) Walter S. Gifford, President.

Enclosure.

[fol. 3266] Illinois Bell Telephone Company

Date: July 23, 1931.

I hereby certify that the following is a true copy of resolution duly adopted by the Board of Directors of the Illinois Bell Telephone Company at a meeting duly called and held on December 26, 1928, at which meeting a quorum was present.

Fred Brown, Assistant Secretary. (Seal of Illinois Bell Telephone Company.)

The President reported that the American Telephone and Telegraph Company has offered to reduce the license contract payments of this Company from two per cent (2%) of the gross earnings to one and one-half per cent (1½%), effective as of January 1, 1929, pursuant to the following resolution of the Executive Committee of the American Company:

"Resolved: That the President be authorized to offer to the several licensee companies under existing License Agreement to reduce, effective January 1, 1929, to one and one-half per cent of their total gross earnings as defined in said License Agreements, the payments therein provided to be made by those companies to this Company; provided that this Company reserves the right to withdraw upon four months' notice in writing the reduction hereby authorized; and provided further that this action or any action pursuant hereto shall not limit, impair, or in any way affect this Company's right under a like reservation that was made in connection with the reduction authorized by this Committee on November 16, 1927."

The President recommended that this offer be accepted, whereupon, upon motion, it was

Resolved: That this Company accept the offer of the American Telephone and Telegraph Company to reduce the payment of two per cent (2%) of the gross earnings, payable by this Company to the American Telephone and Telegraph Company, as provided in the existing license agreements, to one and one-half per cent (1½%) of such earnings, such reduction to be made effective as of January 1, 1929, subject to the qualifications stated in the resolution

of the Executive Committee of the American Telephone and Telegraph Company offering such reduction.

[fol. 3267] Copy

Illinois Bell Telephone Company

Chicago, December 27, 1928.

Mr. W. S. Gifford, President American Telephone and Telegraph Company, New York, N. Y.

DEAR MR. GIFFORD: Referring to your letter of the 11th instant, enclosing a copy of the action of the Executive Committee of the American Telephone and Telegraph Company, offering a reduction in the payment, under the license agreement, from two to one and a half per cent of the gross earnings, to be effective January 1, 1929, I enclose a certified copy of the resolution adopted by the Board of Directors of the Illinois Bell Telephone Company on the 26th instant accepting this offer.

Yours very truly, (Signed) W. R. Abbott, President.

[fol. 3268] Copy

American Telephone and Telegraph Company

New York, September 29, 1930.

Mr. F. O. Hale, President Illinois Bell Telephone Company, 212 West Washington Street, Chicago, Illinois.

DEAR MR. HALE: The Executive Committee of this Company has authorized me to execute the restatement of the license agreement with your Company and to arrange that payments thereunder be continued temporarily at one and one-half per cent (1½%) upon the same conditions that have applied heretofore under Mr. Gifford's letter to Mr. Abbott dated December 11, 1928. A certified copy of the Resolution adopted by the Executive Committee is enclosed herewith.

The provisions of the license agreement do not apply to the division of tolls and originating commissions for the Chicago area, and it is my understanding that these will continue to be governed by the arrangements heretofore made and now in effect between our two companies. Will you kindly confirm this understanding.

Under date of September 24, 1930 you sent me a certified copy of the Resolution adopted by your Board of Directors in this matter. An executed copy of the agreement is herewith returned for your files.

Very truly yours, (Signed) C. P. Cooper, Vice-President.

[fol. 3269] Copy

Illinois Bell Telephone Company

Chicago, October 10, 1930.

Mr. C. P. Cooper, Vice President American Telephone and Telegraph Company, 195 Broadway, New York City, N. Y.

DEAR MR. COOPER: Please accept my thanks for your letter of September 29th, forwarding a certified copy of the resolution adopted by the Executive Committee of your Company authorizing execution of the restatement of the license agreement, and returning an executed copy of the agreement for our files.

As stated in your letter, the provisions of this agreement do not apply to the division of tolls and originating commissions for the Chicago Area, and your understanding that these will continue to be governed by the arrangements heretofore made and now in effect between our two companies, is correct, and I hereby confirm that understanding.

Yours very truly, (Signed) F. O. Hale, President.

[fol. 3270] Agreement Between American Telephone and Telegraph Company and Illinois Bell Telephone Company, Covering Services, Licenses, and Privileges

September 25, 1930

[fol. 3271] This Agreement, dated this 25th day of September, 1930, between American Telephone and Telegraph Company, a corporation of the State of New York, hereinafter called the "Licensor," and Illinois Bell Telephone Company, a corporation of the State of Illinois, hereinafter called the "Licensee," Witnesseth: Whereas, the Licensee, formerly named the Chicago Telephone Company, as an

Associated Company of the Bell System has been and is now conducting a telephone business within the territory hereinafter defined under a certain license contract with the Licensor, particularly as evidenced by memorandum thereof, between the Licensor and the said Chicago Telephone Company, dated February 1, 1919, and supplements thereto, as modified by an indenture of sale, dated November 8, 1920, from the Central Union Telephone Company to said Chicago Telephone Company and as further modified by an agreement, dated March 26, 1929, between the Licensor and the Licensee; and

Whereas, the agreement of the parties hereto that telephones manufactured under the patents of the Licensor shall be purchased by the Licensee for use within said territory rather than furnished and repaired as theretofore by the Licensor makes it desirable to state and reaffirm in this instrument the license and service contract relations which continue in force between them;

Now, therefore, in consideration of the premises and of the covenants and agreements herein set forth the parties hereto agree as follows:

[fol. 3271a] 1. For the purposes of this agreement:

(a) The telephone business of the Licensee is the furnishing to the public for compensation of telephone service within the territory of the Licensee as hereinafter defined.

(b) An exchange means a system established to provide telephonic communication within a particular area usually within or embracing a city, town or village and environs. This system consists of one or more central offices together with the associated plant including circuits, equipment and telephones.

(c) The term "exchange service" applies to telephone service within an exchange area.

(d) The term "toll service" applies to telephone service between exchange aras.

2. The Licensee is licensed to use within its territory all telephones and all telephonic devices, apparatus, methods and systems needed for its business as defined herein which are covered by patents now or hereafter owned or controlled by the Licensor or which it may have the right to authorize the Associated Companies of the Bell System to

use; but no such telephones, telephonic devices, apparatus, methods or systems shall be disposed of by the Licensee without the consent of the Licensor except to those licensed by the Licensor to use them or to manufacturers licensed by the Licensor.

The Licensee shall be protected and saved harmless by the Licensor from all actions or suits charging infringement of patents arising from the use of any telephones or telephonic devices, apparatus, methods or systems which the Licensor may recommend.

All rights not specifically granted to the Licensee remain to the Licensor.

3. The Licensor will prosecute continuously fundamental work of research, investigation and experimentation in the development of the art and science of telephony and in the development of plans, methods, systems and ideas designed [fol. 3271b] to improve telephone service and to promote safety, economy and efficiency in the equipment, construction and operation of the telephone plants of the Associated Companies of the Bell System, and will direct development work by others for the production of materials and apparatus necessary for rendering the products of such work of the Licensor available for use by such Associated Companies.

The Licensee shall have the right to use and the Licensor will render available for use by the Associated Companies of the Bell System as and when completed and standardized all products of the Licensor's fundamental work of research, investigation and experimentation, and all inventions, discoveries and patents, and all methods and systems covered by patents needed for the said business of the Licensee, and all apparatus and appliances, methods and systems embodying such inventions, discoveries and patents, and to this end, if any patent rights held by others in any such invention or discovery are necessary to make such invention or discovery available for such use, the Licensor will, in case such invention or discovery relates to telephones, acquire the requisite patent rights therein, and, in case such invention or discovery relates to other than telephones, provide suitable arrangements for making the apparatus, appliances, methods and systems embodying such invention or discovery available for use as aforesaid; provided that each such acquisition or arrangement can, in

the judgment of the Licensor, be consummated on reasonable terms.

4. The Licensor will make and maintain continuously in effect adequate arrangements whereby telephones and other telephonic devices and apparatus needed for the business of the Licensee may be manufactured under all patents now or hereafter owned or controlled by the Licensor, or under which it may have the right to grant licenses to others, and whereby the Licensee may purchase such telephones, telephonic devices and apparatus for use in its [fol. 3272] territory and subject to the provisions hereof, at prices which shall be reasonable and not higher than the lowest prices charged by the manufacturer from time to time to others under similar circumstances.

5. The Licensor will furnish to the Licensee

(a) Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting (including the auditing of accounts), patent, legal, administrative and other matters pertaining to the efficient, economical and successful conduct of said business of the Licensee; such advice and assistance to be given by the Licensor through conferences with its specialists and the issuance to the Licensee of data and conclusions, including bulletins, books, circular letters, and standard specifications and drawings, and through the performance of specific work in cases of unusual magnitude and complexity where such work is necessary or desirable.

(b) Advice and assistance in any financing required to be done by the Licensee in the extension, development or improvement of its telephone system within its said territory and in the general matter of its finances; aid in securing funds on fair terms, as and when needed for new construction and other expenditures, but not, at any time, to a greater extent than the then condition of the finances and credit of the Licensor may permit; active assistance in the marketing of the Licensee's securities; and such other necessary financial support and assistance in the premises as will tend to serve the best interests of both companies.

(c) Active assistance, cooperation and support in connection with the adoption from time to time by the Licensee of such measures as will, in the judgment of the parties

hereto, best protect and preserve the health and promote the well-being in employment of the employees of the Licensee and, in other ways, conserve the high quality of its service to the public through the maintenance of a stable, contented and efficient personnel.

[fol. 3273] 6. The Licensor will maintain continuously an organization of specialists trained in the various branches of the work required to be done by the Licensor in rendering the foregoing services, of such numbers and possessed of such technical knowledge and experience as will enable said work to be so done as to relieve the Licensee from the necessity of attempting to perform said work for itself.

7. The Licensor will maintain continuously or cause to be so maintained proper connections between the telephone system of the Licensee and the telephone systems of the other Associated Companies of the Bell System and between places within the territory of the Licensee which the latter is not authorized to connect.

8. The Licensee shall have the right

(a) To extend to the subscribers and other patrons of the Licensee and of its connecting companies within its said territory the privilege of using, upon payment of the regular tolls therefor, the connections herein provided between its telephone system and the telephone systems of the other Associated Companies of the Bell System for telephonic communication between such subscribers and other patrons and the subscribers and other patrons of such Associated Companies and of their connecting companies in their respective territories.

(b) For the betterment of the service throughout its said territory, to extend to its connecting companies within its said territory, on such terms and conditions as it may determine, the benefit of such engineering and other technical advice and information with respect to construction, maintenance, repair and operation of plant as the Licensee may receive from the Licensor.

The Licensee shall not directly or indirectly connect with the lines of the Licensor or its appointees any telephone facilities which in the judgment of the Licensor would unduly impair the quality of the service.

[fol. 3274] 9. The Licensee may enjoy any of the rights of way and similar franchises of the Licensor to construct and maintain lines, which the Licensor can permit it to use, when and so long as, in the judgment of the Licensor, it shall not interfere with the enjoyment thereof by the Licensor or its other licensees, and may, to the extent and under the conditions aforesaid, use the Licensor's overhead and underground facilities for supporting or carrying wires (both open and in cable) upon paying a pro rata share of the cost of constructing and maintaining them, computed in accordance with the then existing practices of the parties, or such other reasonable compensation as may be agreed upon. For trunk lines from the several exchange offices to points outside of the respective exchanges, the Licensor may enjoy all rights of the Licensee to construct and maintain lines which the Licensee can permit it to use, when and so long as, in the judgment of the Licensee, it shall not interfere with the enjoyment thereof by the Licensee or its other Licensees, and may, to the extent and under the conditions aforesaid, use the Licensee's overhead and underground facilities for supporting or carrying the Licensor's wires (both open and in cable) upon paying a pro rata share of the cost of constructing and maintaining them, computed in accordance with the then existing practices of the parties, or such other reasonable compensation as may be agreed upon. The Licensor reserves the right to use telephones on lines connecting places in the territory of the Licensee with other places in said territory which the Licensee is not authorized to connect hereunder or with places outside said territory, or connecting places outside said territory with each other. The Licensee will allow the Licensor to connect the wires of any such lines with its said lines in order to constitute thereby a through line, of which the Licensee's lines or any part of them can form a portion or link, in order to forward through communications or messages; will make or permit to be made con-
[fol. 3275] venient switchboard or other connections for that purpose, and as compensation for such use of its lines and for making such connections will take a share of the through toll (terminal expenses being first deducted) pro rata according to distance, and will also allow any telephone exchange located outside the territory of the Licensee to be designated by the Licensor to connect with the

Licensee's lines for the purpose and substantially in the manner and upon the terms herein provided in respect of such trunk line connections. In respect of all communications or messages originating on its lines and which are to be routed or forwarded over any lines of the Licensor or its appointees, the Licensee shall require the patron or subscriber to bind himself to pay the tolls thereon and to make every communication or message subject to such contracts, stipulations, and limitations of liability as the Licensor may from time to time require, in such form as it may from time to time prescribe, and will hold the Licensor harmless from all loss or expense consequent upon the Licensee's failure so to do. Whenever the consent of a commission or other public tribunal to the use by the Licensor or the Licensee of the plant or other facilities of the other is required by law, no agreement made under and pursuant to the provisions of this paragraph shall be effective until such consent is obtained.

The Licensor may enter the offices and connect with the exchanges of the Licensee any lines to points without the territory of the Licensee or to points within said territory which the Licensee is not authorized to connect, in order to establish communication between patrons of such exchanges and parties at such points reached by said lines, and may there operate said lines with suitable appliances; the Licensee will permit its patrons to use such lines and by its own operators will handle such communications or messages to and from its patrons, or make the proper switchboard or other connections for direct communication [fol. 3276] as may be requested, and in such manner, not inconsistent with the proper conduct of its office, as the Licensor shall direct. But if the Licensor is not satisfied with the manner in which it is performed, it may establish its own offices and trunk and radiating lines for such purpose.

10. The Licensee will cause each of its exchanges to route, over the lines of the Licensor and of such parties as the Licensor may from time to time appoint, all communications to points outside the Licensee's territory, or to points within said territory which the Licensee is not authorized to connect, originating at such exchanges, on its lines, or at the exchanges or on the lines of its connecting companies within its territory, or coming on the wires or

within the control of the exchange, where the Licensor or its said appointee has wires and will accept the communications, so far as the Licensee can lawfully control the same and unless otherwise specially directed by its patrons, but the Licensee will not solicit such special directions or receive or pay tolls for transmission over other lines unless compellable by law so to do. Each such communication on which the charge is reversed shall be considered as originating at the station against which the charge is to be made.

The Licensee shall keep and furnish an account of each such communication, and shall collect and on demand pay over to the Licensor or its said appointees, respectively, the tolls for transmission beyond the exchange, according to such rates and rules as each shall establish, and shall exhibit its accounts and the tickets from which they are made, so far as may be proper to verify the same. The Licensee, in the handling of all business interchanged hereunder shall observe the Licensor's operating methods and rules from time to time established for the use of its lines and shall keep such records and furnish such reports with respect thereto as the Licensor may from time to time reasonably request.

Each exchange shall, if and when so requested by the Licensor, make proper switchboard or other connection be- [fol. 3277] tween the lines of the Licensor or its Licensees from points without such exchange and terminating in such exchange office, for the purpose thereby of making up a through line between points without such exchange. In respect of all the business referred to in this Article, the Licensee shall make no charge to its own subscriber or patron, but shall be entitled to the following compensation and none other: Upon communications originating at an exchange or toll station of the Licensee or of a connecting company of the Licensee within its territory and passing over the lines of the Licensor or its appointees, compensation based upon the average revenue per originating message in accordance with the schedule of commissions set forth in Appendix A hereto attached and made part hereof; said compensation to cover the use of the necessary switchboard and trunking and other toll terminal plant and facilities and all the facilities and services of an exchange furnished for and in connection with such communications

whether to or from such exchange, except the exchange service facilities required to establish connection between an exchange station and the toll terminal plant, for the use of which excepted facilities the Licensee is compensated by its rates for exchange service in such exchange. In case an exchange shall be required to make a switchboard connection for the purpose of making up a through line between points without such exchange, the exchange shall receive, for making such connection, such compensation as may be agreed upon.

11. In consideration of the premises and for all benefits accruing to the Licensee hereunder, the Licensee shall pay to the Licensor a sum equal to two and one-half per cent. (2½%) of the total gross earnings of the Licensee, which shall be payable in monthly installments, as herein provided, and in accordance with the established practice of the parties hereto, and shall be computed as follows: Such total gross earnings shall be computed by adding the following accounts described and defined in the Uniform Sys- [fol. 3278] tem of Accounts for Telephone Companies prescribed by the Interstate Commerce Commission: Account 500 Subscribers' Station Revenues, Account 501 Public Pay Station Revenues, Account 504 Private Exchange Lines, and Account 510 Message Tolls, and by deducting from the total thereof Account 304 Uncollectible Operating Revenues. To such gross earnings of the Licensee there shall be added an amount equal to the gross earnings, similarly computed, for each other telephone company operating in the territory of the Licensee in which the Licensee owns a majority either of the voting stock or of the entire capital stock; provided, however, that on application by the Licensee for the exclusion of all or any portion of such gross revenues of any such operating company the question shall be carefully considered and determined.

The amount of each installment of said sum equal to two and one-half per cent. (2½%) of the Licensee's total gross earnings due for each month shall be determined by such total gross earnings of the second preceding month, computed in the manner aforesaid, and a statement, over the signature of the proper accounting officer of the Licensee, of its total gross earnings for each calendar month, computed in the manner aforesaid, shall be sent to the Comptroller of the Licensor, or to such other officer of the Licen-

sor as it may theretofore designate, on or before the twenty-fifth day of the next succeeding month and payment in New York funds shall be made on or before the tenth day of the month next following, that being the month for which such payment is due.

The Licensee will make such reports, giving such information regarding the operations of its exchanges and lines as the Licensor may from time to time reasonably request.

12. If the Licensee shall fail to pay any sums due hereunder for thirty days after the same shall become payable or shall violate any other term or condition of this agree- [fol. 3279] ment and shall fail to remedy or repair the same for sixty days after written notice thereof from the Licensor, the Licensor may, if it shall so elect, by written notice to Licensee, terminate the rights of the Licensee hereunder and may resort to any of its rights and remedies in law or in equity under the patent laws or otherwise, including the remedy by injunction against the Licensee or those claiming under it.

13. The contractual relations hereunder are personal to the Licensee, and any assignment or attempt to assign its rights hereunder or the lines established hereunder or any of them, by act of the party or operation of law, without the written consent of the Licensor, will be good ground for a cancellation hereof by the Licensor. Whenever the Licensor grants to others the rights for exchanges or any of its rights under Articles 9 and 10 hereof or for connecting lines or any other rights remaining to it, the stipulations hereof relating thereto shall be binding upon and inure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to perform the stipulations hereof, its title to the patent rights under which telephones and apparatus are licensed herein, and its then existing rights hereunder, the provisions hereof shall inure to the benefit of and be binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereto, and the Licensor shall no longer be responsible hereunder.

14. The rights of the Licensee hereunder shall be perpetual, unless determined as herein provided.

15. The territory of the Licensee hereunder is as follows, viz.:

The State of Illinois, excepting the Counties of Monroe and St. Clair and the Township of Venice, in the County of Madison; and the Counties of Lake and Porter, in the State of Indiana.

[fol. 3280] In witness whereof, the parties hereto have caused their respective corporate seals to be hereto affixed and these presents to be subscribed in their names and behalf by their respective officers thereto duly authorized.

American Telephone and Telegraph Company, by C. P. Cooper, Vice-President. Attest: A. A. Marsters, Secretary. (Corporate Seal.) C. M. B. Illinois Bell Telephone Company, by F. O. Hale, President. Attest: A. R. Bone, Secretary. (Corporate Seal.)

[fol. 3281] Appendix "A"

Average revenue per out message but not over		Messages from offices where the toll operating is done by American Co. commission per out-message	Associated Co. commission per out message
	$.75	$.112	$.290
$.75	.80	.113	.295
.80	.85	.114	.300
.85	.90	.115	.305
.90	.95	.116	.310
.95	1.00	.117	.315
1.00	1.05	.118	.320
1.05	1.10	.118	.325
1.10	1.15	.119	.330
1.15	1.20	.119	.335
1.20	1.25	.120	.340
1.25	1.30	.120	.345
1.30	1.35	.121	.350
1.35	1.40	.121	.355
1.40	1.45	.122	.360
1.45	1.50	.122	.365
1.50	1.60	.123	.370
1.60	1.70	.124	.375
1.70	1.80	.125	.380
1.80	1.90	.126	.385

Appendix "A"—Continued

Average revenue per out message but not over		Messages from offices where the toll operating is done by American Co. commission per out-message	Associated Co. commission per out message
1.90	2.00	.127	.390
2.00	2.12½	.129	.400
2.12½	2.25	.129	.400
2.25	2.37½	.131	.410
2.37½	2.50	.131	.410
2.50	2.75	.132	.415
2.75	3.00	.133	.420
3.00	3.25	.134	.425
3.25	3.50	.135	.430
3.50	3.75	.136	.435
3.75	4.00	.137	.440
4.00	4.50	.138	.450
For each increase of .50 add		.001	.005

(Here follow side folios 3282 and 3283)

EXHIBIT A-207 3282

Plan for EMPLOYEES' PENSIONS DISABILITY BENEFITS and DEATH BENEFITS

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(INCORPORATED)

AND

ASSOCIATED AND ALLIED COMPANIES

(EFFECTIVE JANUARY 1, 1913, WITH AMENDMENTS TO AND INCLUDING JULY 1, 1928)

3283
F.G.ETTER

Amendments to

PLAN FOR EMPLOYEES' PENSIONS DISABILITY BENEFITS AND DEATH BENEFITS

(Effective January 1, 1930)

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

[fol. 3284] Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Summary of Amended Provisions

(This Summ[redacted]s paragraph 4 on page 3 of the Benefit Plan pa[redacted]covers only certain of the new provisions. Fo[redacted]atement of all provisions see the text of the a[redacted]n the following pages.)

Death Benefits:

If the employee leaves a wife who was living with him at the time of his death, a husband who was physically or mentally incapable of self-support and who was actually supported by the employee at the time of her death, or a child under the age of 18 years (or over that age if physically or mentally incapable of self-support) who was actually supported by the employee at the time of death, the amount to be awarded is the maximum specified in the schedules.

In all other cases the amounts to be awarded (within the limits indicated by the schedules) and the persons to whom the payments shall be made are subject to the discretion of the Benefit Committee.

Beneficiaries are limited to a wife (or husband), dependent children and other dependent relatives of the deceased.

The Death Benefit schedules are:

a) Accident Death Benefits:

Regardless of the employee's term of employment an Accident Death Benefit not to exceed the amount specified below may be paid in case of death by accident arising out of and in the course of employment:

Three years' pay, not to exceed $5,000; provided, however, that if a greater amount could have been paid under the Sickness Death Benefit schedule below had the employee died from sickness rather than from accident, the maximum of $5,000 is increased to the amount of the Sickness Death Benefit.

In addition to the Accident Death Benefit the necessary expenses of burial, not to exceed $250, will be paid.

[fol. 3285] b) Sickness Death Benefits:

If the deceased employee had a term of employment of two years or more, a Sickness Death Benefit not to exceed the maximum shown below may be paid:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payments in Case of Death of Pensioners:

In the discretion of the Committee payments may be made to the wife (or husband), dependent children or other dependent relatives of the deceased. The maximum amount of such payments shall not exceed the amount which could have been paid under the Sickness Death Benefit schedule if the pensioner had died on his last day of active service.

Manner of Payment:

The payments described above will be made in monthly amounts, unless otherwise specified by the Committee, and will cease upon the death of the beneficiary.

Text of Amended Provisions

Entire Section 7 of the Plan is amended to read as follows:

Death Benefits:

(1) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from accidental injury, on or after January 1, 1913, arising out of and in

the course of employment by the Company, hereinafter referred to as death by accident, there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) an Accident Death Benefit, the maximum amount of which shall be three years' wages, as defined in Paragraph 8 of this Section, but which shall not exceed Five Thousand Dollars ($5,000); provided, however, that if the maximum Sickness Death Benefit which could have been paid under the provisions of the next succeeding paragraphs had said employee died from sickness rather than from accidental injury, is in excess of said limit of Five Thousand Dollars ($5,000), said limit shall be increased to the amount of said maximum Sickness Death Benefit. Payment of the Accident Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and Paragraph 29 of Section 8 and elsewhere in these Regulations, shall be made to the employee's beneficiaries as provided in Paragraph 4 of this Section. In addition to the Death Benefit the necessary expenses of the burial of the deceased employee, not exceeding Two Hundred and Fifty Dollars ($250), shall be paid.

[fol. 3286]

(2) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, hereinafter referred to as death by sickness, if the employee's term of employment has been two years or more there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) a Sickness Death Benefit which shall not be in excess of the amount specified in the following schedule:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payment of the Sickness Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and elsewhere in these Regulations, shall be made to the employee's beneficiaries, as provided in Paragraph 4 of this Section.

(3) In the event of the death on or after January 1, 1930 of any person who at the time of death is receiving a pension under these Regulations the Committee in its discretion may authorize further payments to the wife (or husband) or dependent relatives of the pensioner the total amount of which shall not exceed the maximum amount which could have been paid as a Sickness Death Benefit under the terms of Paragraph 2 of this Section if the pensioner had died on his last day of active service.

(4) The persons who may be beneficiaries of the Accident or Sickness Death Benefit or of payments on the death of a pensioner hereunder are limited to the wife (or hus- [fol. 3287] band) and the dependent children and other dependent relatives of the deceased. The amount to be paid in each case and the beneficiary or beneficiaries who shall receive the same, and the share which each shall receive, shall be determined by the Committee, subject to the following provisions and to the provisions of Paragraph 5 of this Section.

(a) In the event of death by accident the maximum Accident Death Benefit specified in Paragraph 1 of this Section, or in the event of death by sickness, the maximum Sickness Death Benefit specified in Paragraph 2 of this Section, shall be paid, subject to the provisions of sub-paragraph (c) of this Paragraph 4, to the wife of the deceased employee if living with him at the time of his death; to the husband of the deceased employee, if physically or mentally incapable of self-support and actually supported in whole or in part by the deceased employee at the time of her death; or to the child or children of the deceased employee under the age of eighteen years (or over that age if physically or mentally incapable of self-support) who were actually supported in whole or in part by the deceased employee at the time of death. If the employee leaves both wife (or husband) and a child or children, as here described, the Committee, in its discretion, may pay the Death Benefit to or for any one or more of such possible beneficiaries in such portions as it may determine.

(b) If there be no beneficiary of the deceased employee as described above in sub-paragraph (a), then, in the event of death by accident, an Accident Death Benefit in an amount not to exceed the amount specified in Paragraph 1 of this Section, or in the event of death by sickness, a Sickness Death Benefit in an amount not to exceed the amount specified in Paragraph 2 of this Section, may be paid to any other person or persons who may be beneficiaries, as defined in the first sentence of this Paragraph 4, and be receiving or entitled to receive support from the deceased employee at the time of his death.

Subject to the limitations expressed in this sub-paragraph (b) the Committee shall have full authority to determine to whom payments shall be made and the amount of the payments, taking into consideration the degree of dependency and such other facts as it may deem pertinent.

(c) If the employee shall have made written request and shown good cause therefor, the Committee may pay all or a [fol. 3288] portion of the Death Benefit to a person or persons included in sub-paragraph (b) above, and reduce, by the amount thus paid, the amount which is payable to the persons included in sub-paragraph (a), provided in the opinion of the Committee good cause for such action still exists at the time of the employee's death.

(d) Upon the death of an employee or pensioner, if there be no beneficiary qualified to receive an award under the provisions of this Section, or if the amount of such award authorized by the Committee be less than the maximum specified in Paragraph 1, 2 or 3 of this Section, as the case may be, the Committee may authorize such payments as may be required to defray the necessary expenses incident to the death of the employee or pensioner and the disability immediately preceding, together with, in the case of death by sickness, the necessary expenses, not exceeding Two Hundred and Fifty Dollars ($250), of his burial, provided, however, that the aggregate amount so paid shall not exceed the maximum benefits specified in said paragraphs.

(5) Unless otherwise specified by the Committee the Death Benefit at the death of an employee or the amount awarded at the death of a pensioner shall be paid in monthly sums equal to the monthly wages or monthly pen-

sion paid at the time of his death. In the discretion of the Committee, however, such sums and times of payments may be varied.

In the event of the death of a beneficiary who is receiving or is entitled to receive installment payments under this Section, such payments shall cease. In the discretion of the Committee, however, and within the amounts which the deceased beneficiary would have received if he had survived, the Committee may authorize payments in connection with the disability, death and burial of the deceased beneficiary under conditions similar to those described in sub-paragraph (d) of Paragraph 4 of this Section, or may authorize payments to some other person eligible as a beneficiary of the deceased employee or pensioner under the provisions of Paragraph 4.

Upon the death of an employee or pensioner, the Committee, without awaiting determination of the beneficiary or beneficiaries, if any, to whom the award will be made, may pay an amount equivalent to the wages, disability benefits or pension which the deceased was receiving, to the end of the payroll period in which the death occurs, and such payment may be made to the wife of the deceased, or to some other suitable person selected by the Committee. [fol. 3289] Such payment, if made, shall constitute a part of the award. In addition the Committee, in its discretion, may authorize payment before the final settlement, of a part of the award not exceeding Two Hundred and Fifty Dollars ($250), to meet urgent expenses incident to the death and the immediately preceding disability of the deceased. If any of the persons to whom an award may be payable cannot be found or cannot be conveniently communicated with or are incompetent to authorize use of any part thereof for the burial of the deceased and the payment of necessary expenses incident to his death and preceding disability, the Committee in its discretion may make such payments, as a part of the award, as in its judgment may be reasonable for the proper burial of the deceased and the payment of necessary expenses incident to his death and disability immediately preceding.

(6) A Death Benefit shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and con-

tinued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases a Death Benefit may be paid, in the discretion of the Committee, provided it has been furnished from time to time with such proof of continued disability as it may have required and provided it has been permitted to make, or have made by a physician, such examinations of the disabled person as it has deemed necessary in order to ascertain his condition. The amount of the Death Benefit, if any, shall not exceed the amount which could have been paid if the disabled person had died on the day he ceased to be an employee of the Company.

(7) All claims for Death Benefits, to be valid, must be made in writing within one year of the death on which the claim is based. In case notice in writing of the existence of a wife (or husband), child or other dependent relative of a deceased employee shall not be served on the Committee within one year after such employee's death, it shall be conclusive, in so far as these Regulations are concerned, that there are no such persons in existence.

(8) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death by sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

[fol. 3290] (9) All amounts payable under this Section shall be a charge to the operating expense accounts of the Company when and as paid.

Section 4, Paragraph 4, of the Plan is amended to read as follows:

Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Further payments, if any, which may be made to the wife or dependent relatives of a deceased pensioner are as provided and limited by Section 7 of these Regulations.

Section 8, Paragraph 19, of the Plan is amended to read as follows:

Disability benefits or pensions accrued but unpaid at the death of an employee or pensioner may, in the discretion of the Committee, be paid to the wife of the deceased person or to some other suitable person selected by the Committee, for use in payment of expenses incident to the death of the deceased person or the disability immediately preceding, or for the benefit of any one or more persons who were dependent upon him at the time of his death.

Do not consider death benefits as a substitute for individual life insurance.

[fol. 3291] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

This pamphlet describes the "Plan for Employees' Pensions, Disability Benefits and Death Benefits" of the American Telephone and Telegraph Company and the word "Company" in the text of the Plan on pages 5 to 20 means said Company.

A similar Plan has been adopted by the Associated Operating Companies (in the United States) of the American Company and by the Western Electric Company, Incorporated, and agreements for interchange of benefit obligations have been made as provided in Section 9 of the Plan.

Summary of Benefits

A brief summary of benefits to which employees may become entitled is given below. The complete plan is contained in sections headed "Plans for Employees' Pensions, Disability Benefits and Death Benefits," pages 5 to 20.

1. Pensions:

1) Retirement on pension is provided for employees coming under the classes listed below. Employees in Class A may be retired on a service pension either at their own request or at the discretion of the Committee. Employees in Classes B and C may be retired on a service pension only

at the discretion of the Committee and with the approval of the President or Vice-President.

[fol. 3292] a.) Service Pensions:

Class A—Employees whose age is 60 years or more (females 55 or more) and whose term of employment has been 20 years or more.

Class B—Employees whose age is 55 to 59 years (females 50 to 54) and whose term of employment has been 25 years or more.

Class C—Employees whose age is less than 55 years (females less than 50) and whose term of employment has been 30 years or more.

b) Disability Pensions:

Class D—Any employee whose term of employment has been 15 years or more and who becomes totally disabled by reason of sickness may, at the discretion of the Committee and with the approval of the President or Vice-President, be granted a disability pension, which shall continue for such period only as the Committee may decide.

2) The amount of the annual pension in any of the above cases is 1% of the average annual pay for 10 years, multiplied by the number of years in the employee's term of employment.

Example: An employee whose term of employment at time of retirement has been thirty years and whose average pay for ten years has been $1,500 a year, will receive an annual pension equal to 30% of $1,500, or $450, payable in monthly amounts of $37.50.

NOTE.—The minimum pension will be $30 a month, but this is not to apply to disability pensions granted to employees of less than 20 years' service or to pensions granted to "part time" employees.

2. Accident Disability Benefits:

Total Disability—Full pay 13 weeks, half pay for remainder of disability. Maximum benefits to be $20 a week after six years of benefit payments.

Partial Disability—For first 13 weeks, 100% of loss in earning capacity; for remainder of disability, 50% of loss

in earning capacity. Period of payments not to exceed six years in all.

[fol. 3293] 3. Sickness Disability Benefits:

These benefits begin on the eighth calendar day of absence on account of sickness and are as follows:

(a) For employees whose term of employment has been 10 years or more—Full pay 13 weeks; half pay 39 weeks.

(b) For employees whose term of employment has been 5 years or more, but less than 10 years—Full pay 13 weeks; half pay 13 weeks.

(c) For employees whose term of employment has been 2 years or more, but less than 5 years—Full pay 4 weeks; half pay 9 weeks.

NOTE.—Benefits are not provided in the Plan for sickness of employees of less than two years' service. In such cases such practice as the Company may establish from time to time will be followed.

4. Death Benefits:

These are payable only to wife (or husband) or dependent relatives of deceased employee and are:

(a) Sickness Death Benefits:

If employee's term of employment has been 10 years or more—One year's pay, not to exceed $2,000.

If employee's term of employment has been 5 years or more, but less than 10 years—Six months' pay, not to exceed $2,000.

(b) Accident Death Benefits:

Three years' pay, not to exceed $5,000, and the necessary expenses of burial, not to exceed $150.

Applications for Benefits

Applications for benefits shall follow the approved instructions of the Company. In default of such instructions applicants should promptly communicate with the Secretary of the Employees' Benefit Committee, to whom should also be addressed other communications with reference to the Plan.

[fol. 3294]

Retirement Age

By action of the Directors of the Company a rule has been adopted which requires that on July 1, 1930, every officer or other employee who at that time is 65 years of age or over, shall retire from active service, and that thereafter every officer or other employee becoming 65 years of age shall retire at the end of the month in which that age is reached. Provision is made, however, that by specific action of the Directors the operation of this rule may be delayed from year to year with respect to any employee who is performing such services for the Company that continuation in active employment is deemed for the best interests of the service. Pensions will be voted to those persons retired by the operation of this rule who are eligible to pensions under the Plan at the date of retirement.

Employees' Record of Service

Each employee on entering the service of the Company will be given a copy of this pamphlet and, at that time or at such later time as is the practice of the Company, will be required to furnish for the files of the Committee, on a form supplied for that purpose, information regarding his previous service and the name of his beneficiary in case of death.

Leave of Absence, Lay-off, and Transfers

Attention is called to the provisions in regard to absences from the service contained in Paragraphs 5, 6 and 7 of Section 8 of the Plan. In order that all employees may be treated fairly, the Company has established routines which must be observed if the continuity of the employee's service is to be preserved in case of transfer from one Company to another and in case of any absence from the service without pay. Failure on the part of the employee to inform himself of these routines and to observe them may result in loss of credit for previous service. Employees may obtain information regarding the routines from their immediate superiors or from the Secretary of the Employees' Benefit Committee.

[fol. 3295] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

Section 1. Undertaking:

The American Telephone and Telegraph Company undertakes, in accordance with these Regulations, to provide for the payment of definite amounts to its employees when they are disabled by accident or sickness or when they are retired from service, or, in the event of death, to their dependent relatives.

Section 2. Definitions:

1) In these Regulations the word "Plan" shall mean the Plan for Employees' Pensions, Disability Benefits and Death Benefits, as set forth in these Regulations.

2) The word "Company" shall mean the American Telephone and Telegraph Company, a New York corporation, or its successors.

3) The words "President" and "Board of Directors" or "Board" shall mean the President and Board of Directors respectively of the Company.

4) The word "Committee" shall mean the persons appointed by the Board to administer the Plan.

5) The word "Employees" shall mean those persons who receive a regular and stated compensation from the Company other than a pension or retainer.

6) The expression "term of employment" shall mean period of continuous employment in the service of the Company, or of the Company and one or more Associated or Allied Companies with which agreements have been or shall be made for interchange of benefit obligations as provided in Section 9 of these Regulations, or in the service of any Bell Company predecessor of any of the above Companies. Service in companies subsidiary to, allied with or predecessors of an Associated or Allied Company will be considered, in determining "term of employment," as service in the Associated or Allied Company, in all cases authorized by

appropriate action on the part of the Associated or Allied Company and approved by the Committee of the American Telephone and Telegraph Company.

[fol. 3296] Section 3. Committee:

1) There shall be a Committee of five (5) appointed by the Board to serve during its pleasure, which Committee shall be called the Employees' Benefit Committee. This Committee shall be charged with the administration of the Plan.

2) The Committee shall have the specific powers elsewhere herein granted to it and shall have such other powers as may be necessary in order to enable it to administer the Plan.

3) It shall determine conclusively for all parties all questions arising in the administration of the Plan.

4) It shall be empowered to authorize disbursements according to these Regulations.

5) It shall adopt such By-Laws and rules of procedure as it may find necessary, subject to the approval of the President.

6) It shall be empowered to employ a Secretary and such other assistants as may be required in the administration of the Plan.

7) The expenses of the Committee in administering the Plan shall be borne by the Company.

Section 4. Pensions:

1) On and after January 1, 1913:

a) All male employees who have reached the age of sixty years and whose term of employment has been twenty or more years and all female employees who have reached the age of fifty-five years and whose term of employment has been twenty or more years may, at their own request, or at the discretion of the Committee, be retired from active service and become eligible to pensions, which pensions are designated "service pensions."

b) Any employee whose term of employment has been thirty years or more, or any male employee who has reached

the age of fifty-five and whose term of employment has been twenty-five or more years, or any female employee who has reached the age of fifty years and whose term of employment has been twenty-five or more years may, at the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, be retired from active service and granted a pension, which pension is also designated a "service pension."

c) At the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, any employee who has become totally disabled as a result of sickness or of injury, other than by accidental injury arising out of and in the course of employ- [fol. 3297] ment by the Company, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension, which pension is designated a "disability pension." If a disability pesion is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall thereupon be eligible to benefits under these Regulations, and the period of absence on pension shall be considered as a leave of absence and not as a break in the continuity of the employee's service.

2) The annual pension allowance for each employee retired with a pension on account of age, length of service or disability shall be as follows:

For each year of his term of employment, one per centum (1%) of the average annual pay during the ten years next preceding retirement, provided, however, that the Committee may, at its discretion, base such pension upon the average annual pay of the ten consecutive years of service during which the retired employee was paid the highest rate of wages. The minimum pension shall be Thirty Dollars ($30) per month, provided, however, that at the discretion of the Committee the pension allowance may be less than Thirty Dollars ($30) per month, but not less than the allowance computed as aforesaid, in the case of pensions granted under Paragraph 1 (c) of this Section to employees of less

than twenty years' service, and in cases in which, in the opinion of the Committee, the days or hours constituting the employee's normal service have not been adequate to constitute full time service, during the number of years required to establish eligibility to pension in the class under which the employee is retired.

3) Pensions shall be payable monthly or at such shorter periods as the Committee may determine in each case.

4) Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Pensions granted under any of the conditions described in these Regulations may, in the discretion of the Committee, be continued to dependent relatives for a period which shall not extend beyond the end of the twelfth calendar month [fol. 3298] following the death of the pensioner, provided, however, that the total amount paid to all such dependent relatives shall not exceed Two Thousand Dollars ($2,000), in any one case.

5) Regular employment under a salary with this Company or with any company with which arrangements for interchange of benefit obligations, as described in Section 9 of these Regulations, have been made directly or indirectly, shall suspend the right of a retired employee to pension payments during the period he continues in such employment.

6) The Committee shall furnish quarterly to the President a list of all employees qualified to receive pensions.

7) The Committee shall notify all employees of their eligibility to retire on service pensions at their own request, as they become eligible.

8) In order to meet its obligations to pay service pensions (defined in Paragraphs 1 (a) and 1 (b) of this Section) granted to take effect under the Plan, the Company, effective January 1, 1927, established a trust fund to be known as the "Pension Fund." It undertakes to maintain this Fund by periodic charges to operating expenses and payments to the Fund in such amounts that when an employee becomes eligible under the Plan to receive a service pension, there will be available in the Pension Fund an amount sufficint to provide for him a pension in the amount

stated in the Plan. It has also made adequate provision in the Pension Fund for the payment of all service pensions granted under the Plan to take effect prior to January 1, 1927. The Pension Fund shall be held by a trustee or trustees for service pension purposes only and shall be disbursed as directed by the Company from time to time. In case of termination of the Plan, or in case of revocation or other termination of said trust, the Company undertakes to preserve the integrity of the Pension Fund as a trust fund to be applied solely to service pension purposes in the manner which in its judgment will enable it to meet its service pension obligations most effectively. All service pensions granted to take effect under the Plan shall be paid from the Pension Fund.

9) All disability Pensions (defined in Paragraph 1 (c) of this Section) and all payments to dependent relatives of deceased penisoners (defined in Paragraph 4 of this Section) shall be a charge to the operating expense accounts of the Company when and as paid.

Section 5. Accident Disability Benefits:

1) All employees of the Company on January 1, 1913, and thereafter shall be qualified to receive payments under these Regulations on account of physical disability to work [fol. 3299] by reason of accidental injury (not including the accidental injuries specified in Paragraphs 14 and 15 of Section 8 of these Regulations) arising out of and in the course of employment by the Company. Such payments are hereinafter referred to as Accident Disability Benefits.

2) Accident Disability Benefits shall be as follows:

a) Total Disability—Full pay for any period of total disability during the first thirteen weeks of disability, and half pay for any period of total disability after the first thirteen weeks of disability, provided, however, that after the expiration of six years of disability payments, the benefits shall not exceed Twenty Dollars ($20) a week.

b) Partial Disability—For any period of partial disability during the first thirteen weeks of disability, 100% of the difference between full pay at time of injury and wages which, in the judgment of the Committee, the em-

ployee is capable of earning; for any period of partial disability after the first thirteen weeks of disability, 50% of difference between full pay at time of injury and wages which, in the judgment of the Committee, employee is capable of earning, provided, however, that no payments for partial disability shall be made after the expiration of six years of disability payments.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week commonly regarded as constituting full time service, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began.

3) If after a period of total disability the disability becomes partial or after a period of partial disability the disability becomes total, the amount of the benefits shall be changed accordingly.

4) In ascertaining the period during which Accident Disability Benefits shall be paid, the period of disability shall be taken as commencing upon the first day on which, because of disability, a full day's wages is not paid. Successive periods of disability from accident shall be counted together if from the same accident and separately if from different accidents.

5) Accidental injuries shall be considered as arising out of and in the course of employment only where the injury has resulted solely from accident during and in direct connection with the performance of duties to which the employee is assigned in the service of the Company, or which he is directed to perform by proper authority, or in voluntarily protecting the Company's property or interests, and [fol. 3300] there must be a clear and well established history of the cause and circumstances of injury accidentally inflicted, and they must be sufficient to produce the alleged injury, and there must be satisfactory evidence that such injury renders the employee unable to perform his duty in the service of the Company.

6) In case of accidental injury to any employee arising out of and in the course of employment by the Company, resulting in permanent loss of a bodily member or loss of

its use, special benefits, in lieu of all other benefits on account of such injury, may be awarded by the Committee, provided, however, that such special benefits shall not exceed the payment hereinafter authorized to be paid in case of death from accidental injury, except by specific authority from the Board.

7) In case of accidental injury to any employee arising out of and in the course of employment by the Company, the necessary expenses for "first aid" shall, on approval of the Committee, be paid by the Company. In addition the Company will pay for necessary surgical treatment, but no employee shall have authority to contract any bills against the Company or the Committee and nothing herein shall be held to mean or imply that the Company will be responsible for such bills as an employee may contract or his surgeon may charge. Bills for surgical treatment must be itemized before they will be considered by the Committee. The decision as to whether in any case surgical treatment was necessary and as to what constitutes surgical treatment shall rest with the Committee. At its discretion the Committee may authorize payment of other expenses necessary for the proper care and treatment of the employee, during such period as the Committee may determine.

8) All Accident Disability Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 6. Sickness Disability Benefits:

1) All employees of the Company on January 1, 1913, or thereafter shall, after a term of employment of 2 years, be qualified to receive payments under these Regulations on account of physical disability to work by reason of sickness. Such payments are hereinafter referred to as Sickness Disability Benefits. Such payments shall terminate when disability ceases and shall in no case extend beyond the periods hereinafter mentioned. For the purposes of these Regulations, sickness shall include injury other than accidental injury arising out of and in the course of employment by the Company. This Section is subject, however, to the exceptions stated in Paragraph 14 of Section 8 of these Regulations.

[fol. 3301] 2) Sickness Disability Benefits shall be as follows:

a) If term of employment has been 10 years or more—full pay 13 weeks; half pay 39 weeks.

b) If term of employment has been 5 to 10 years—full pay 13 weeks; half pay 13 weeks.

c) If term of employment has been 2 to 5 years—full pay 4 weeks; half pay 9 weeks.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week constituting the employee's normal service under his contract of hiring, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began, provided, however, that the benefits shall at no time exceed the pay which the employee would receive, based on his rate of pay and the general schedule of hours per week constituting a full week's service at the time the disability began.

3) Sickness disability benefits shall begin on the eighth calendar day of absence on account of disability, provided, however, that if an employee has received sickness disability benefits for any period and is again absent on account of sickenss within two weeks after the termination of such period, any benefits on account of such further sickness shall begin on the first day of absence instead of on the eighth day.

4) Successive periods of sickness disability shall be counted together as one period in computing the period during which the employee shall be entitled to benefits, except that any sickness occurring after an employee has been continuously engaged in the performance of duty for thirteen weeks shall be considered as a new sickness and not as part of any disability which preceded such period of thirteen weeks.

5) Employees shall not be entitled to receive sickness disability benefits for time for which any wages are paid them by the Company.

6) All Sickness Disability Benefits shall be a charge to the operating expense accounts of the Company when and as paid.

Section 7. Death Benefits:

1) In the event of the death of any employee, resulting from accidental injury on or after January 1, 1913, arising out of and in the course of employment by the Company, there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations) a Death Benefit which shall equal three years' wages, as hereinafter in this Section defined, but which shall in no case exceed Five Thousand Dollars ($5,000). In addition to the Death Benefit, the necessary expenses of the burial [fol. 3302] of the deceased employee, not exceeding One Hundred and Fifty Dollars ($150), shall be paid.

2) In the event of the death of any employee, on or after January 1, 1913, resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, if the employee's term of employment has been five years or more there shall be payable to the employee's benficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations), a Death Benefit, the amount of which shall be:

a) If employee's term of employment has been 5 to 10 years, six months' wages as hereinafter in this Section defined.

b) If employee's term of employment has been 10 years or more, one year's wages as hereinafter in this Section defined.

c) The maximum Death Benefit in any such case shall be Two Thousand Dollars ($2,000).

3) The Death Benefit, in case of an employee's death by either accident or sickness, shall be paid only to the wife (or husband) or dependent relatives of the employee and such payment shall be made in the following order; provided, however, that upon written application of an employee, and good cause shown, the Committee may authorize a change in such order of payment, but no persons other than the beneficiaries herein designated shall receive payment on account of such benefit:

First. To the wife (or husband) of the employee.

Second. If there be no wife (or husband) of such employee living at the employee's death, then to such child or

children of the employee, and such issue of any deceased child, as were dependent upon such deceased employee for their support at the time of his or her death, in equal shares, such issue of said deceased child, if any, to take equally among them the share said deceased child would have taken if living and dependent.

Third. If there be no children or issue of deceased children dependent upon the employee as aforesaid, then among such other relatives, if any, as were dependent upon the deceased employee for support at the time of his death, and in such proportions as the Committee may decide. If any of such other relatives were only partially dependent upon the deceased employee for support, the death benefit payable to such partially dependent relatives shall be such part of the total death benefits as may be determined by the Committee to be proportionate to the degree of dependence, provided, however, that any relative to whose support the deceased employee was, at the time of his death, regularly contributing an amount equal to 20% or more of his wages, such contribution being necessary for the [fol. 3303] support of such relative, shall be considered to have been wholly dependent upon the deceased employee.

Fourth. If there be no such relative dependent as aforesaid living at such employee's death, the benefit shall lapse, but so much thereof as may be required to defray the necessary expenses incident to the death of the employee and the disability immediately preceding, together with the necessary expenses, not exceeding, however, One Hundred and Fifty Dollars ($150) of his burial, shall be paid by the Company if authorized by the Committee. In case notice in writing of the existence of such wife, husband, child, issue of a child, or dependent relative shall not be served on the Committee within one year after such employee's death, it shall be treated as conclusive that there are no such persons in existence.

4) All claims for death benefits, to be valid, must be made in writing within one year from the date of the death on which the claim is based.

5) Claims for death benefits will be payable within thirty days after the required evidence of their validity is furnished.

6) A part of a death benefit, not exceeding Two Hundred Dollars ($200), may be paid before the final settlement, to meet urgent expenses incident to the death and preceding disability of an employee, to be deducted from the total amount upon final payment.

7) If any of the persons to whom the death benefit is payable are incompetent to give authority for such payments or cannot be found, or are in a foreign country, or for other reasons cannot be conveniently communicated with, the Committee may make such payments, as a part of the death benefit, as in its judgment may be reasonable, for the proper burial of the deceased employee and the payment of necessary expenses incident to his death and disability immediately preceding.

8) If an employee dies during disability from accident or sickness, the death benefit which may be payable shall not be subject to deduction of previous payments of disability benefits.

9) Death benefits shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases Death Benefits shall be payable provided the employee has not been pensioned, and provided the Committee has been furnished, from time to time, such proof of continued disability as it may require, and provided the Committee has been permitted to make or have made, by a physician, such examination of the disabled person as it may deem necessary in order to ascertain his condition.

[fol. 3304] 10) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death from sickness shall be computed [illegible] time constituting the employee's normal service under his contract of hiring.

11) All Death Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 8. General Provisions:

1) Neither the action of the Board of Directors in establishing this plan for employees' pensions, disability benefits and death benefits, nor any action hereafter taken by the Board or the Committee shall be construed as giving to any officer, agent or employee a right to be retained in the service of the Company or any right or claim to any pension or other benefit or allowance after discharge from the service of the Company, unless the right to such pension or benefit has accrued prior to such discharge. No employee shall have any right to a service pension by reason of service less than that specified in Paragraphs 1 (a) and 1 (b) of Section 4 of these Regulations, nor shall any employee have any right in the Pension Fund unless a service pension authorized by the Committee under the Plan has not been paid. No employee shall have any right against the Company to any benefit under the Plan except for the amount to which the employee has theretofore become entitled and which the Committee has directed be paid to that employee under the Plan.

2) Assignment of pensions or other benefits under these Regulations will not be permitted or recognized.

3) Pensions or disability benefits may be suspended or terminated, in the discretion of the Committee and the President, with the approval of the Board of Directors, in cases of conduct prejudicial to the interests of the Company.

4) In all questions relating to the term of employment and rates of pay of employees, the decision of the Committee, based upon these Regulations and upon the records of the Company, shall be final, provided, however, that as to service prior to June 1, 1914, the Committee shall have discretion to base its decisions upon the general intent of these Regulations and upon such information as may be obtainable from any source. As to service on or after June 1, 1914, this discretion shall not exist and the Committee shall base its decisions strictly upon the facts in the case as shown by the records of the Company.

5) Any absence from the service without pay, other than [fol. 3305] absence during a period of disability benefits, or leave of absence or temporary lay-off as defined in Para-

graphs 6 and 7 of this Section, shall be considered as a break in the continuity of service unless the Board of Directors specifically authorizes the Committee to consider such absence as a leave of absence, and if any person is re-employed after such a break in the continuity of his service, his term of employment shall be reckoned from the date of such re-employment.

6) Leave of absence shall not constitute a break in the continuity of service, but in the case of any such absence prior to June 1, 1914, which was of more than six months' duration, the period of absence shall be deducted in computing term of employment. On and after June 1, 1914, leave of absence, for the purposes of these Regulations, shall mean leave formally granted in conformity with the rules of the Company, as adopted from time to time, and, except in the case of leave granted by the Board of Directors as provided in Paragraph 5 of this Section and leave on account of continued disability following the expiration of a period of disability benefits, such leave must be obtained at or before the time the absence begins. Leave of absence for any period in excess of one month shall not be effective unless approved in writing by the Committee, and in any case in which such approval is given, the Committee shall indicate whether or not the period of absence is to be deducted in computing term of employment and whether during the absence the employee shall be eligible to benefits under these Regulations. Absence following the expiration of a period of disability benefits shall be considered as a break in the continuity of service unless the employee is granted a leave of absence, provided, however, that in its discretion, the Committee may consider any such absence as a leave of absence, if satisfactory evidence is furnished that the disability was continuous during the entire period of absence.

7) Temporary lay-off on account of reduction of force shall not be considered as a break in the continuity of service, but when the period of absence from such cause exceeds six months in any twelve consecutive months, the entire period of the absence shall be deducted in computing term of employment, and all subsequent periods of lay-off shall be so deducted until the employee shall have been continuously engaged in the performance of duty for a period

of twelve consecutive months. On and after June 1, 1914, a period of lay-off shall not be considered as temporary unless the employee is re-employed within such period as the rules of the Company, as adopted from time to time, may require, not in any case exceeding two years. If the employee is not thus re-employed, the continuity of his service shall be deemed to have been broken. No benefits under these Regulations shall be payable during a period of lay-off.

[fol. 3306] 8) Every employee who shall be absent from duty on account of sickness or injury must at once notify his immediate superior, and the employee shall not be entitled to benefits for time previous to such notice, unless delay shall be shown to have been unavoidable and satisfactory evidence of disability is furnished.

9) All claims for disability benefits, to be valid, must be made within sixty days from the date of accident or from the first day of absence on account of sickness.

10) Disabled employees wishing to leave home shall obtain from the Committee written approval of absence for a specified time and furnish it satisfactory proof of disability while absent, otherwise no benefits shall be paid for such period of absence.

11) It shall be the duty of disabled employees, when their condition and location do not prevent, to call on the Committee or the Committee's representative at such times as the Committee may require.

12) A disabled employee shall not be entitled to benefits if he declines to permit the Committee to make or have made by a physician, from time to time, such examination as the Committee may deem necessary in order to ascertain the employee's condition, or if he fails to give proper information respecting his condition, or if he prevents the necessary examination by absenting himself from home without arranging with the Committee, or giving satisfactory reasons for not doing so and furnishing the necessary evidence, or if he fails to comply with notice to meet the Committee, at its offices or elsewhere, when his condition and location permit of his doing so.

13) Disabled employees must take proper care of themselves and have proper treatment. Benefits will be dis-

continued to employees who refuse or neglect to follow the recommendations of the Committee.

14) In case of disability or death directly or indirectly due to intoxication or to the use of alcoholic liquors as a beverage or to the use of stimulants or narcotics or to unlawful acts or immoralities or to fighting, unless in self-defense against unprovoked assaults, or to other encounter, such as wrestling or scuffling, or to injury received in any brawl or in any liquor saloon, gambling house or other disreputable resort, or to the wilful intent of the employee to injure himself or another, or to venereal disease, no right to benefits under these Regulations shall exist except at the discretion of the Committee.

15) Death or disability resulting from infection of a cut, abrasion, scratch, puncture, or other wound not immediately disabling and not reported at the time of the occurrence causing the injury, or from sunstroke or frostbite, shall not be classed as due to accident, except at the discretion of the Committee.

[fol. 3307] 16) Payments under the Plan shall be made in conformity with the financial methods of the Company and on orders of or bills prepared by the Committee or such other persons as may be designated by the Committee.

17) Disability benefits will ordinarily be paid at the same intervals of time as would govern the payment of wages to the employee if he were in the performance of duty, but at the discretion of the Committee benefits on account of continued disability may be paid monthly and on account of disability for short periods when the amounts are ascertained.

18) In case of any grave injury or chronic sickness, if the employee requests that a lump sum be paid in full settlement of all claims under the Plan and against the Company on account of such injury or sickness, the Committee may, in its discretion, make full and final settlement with the employee by commuting the benefit payments into a single lump sum payment, which payment shall be the present value computed on a fair basis, of the benefits to which the employee would become entitled during such

period as his disability may reasonably be expected to continue.

19) Disability benefits remaining unpaid at the death of an employee shall be payable to the person or persons entitled to receive the death benefit, and in like proportions.

20) Benefits payable to an employee unable to execute a proper receipt may be paid to a relative or other proper person, selected by the Committee, to use for the benefit of the employee and the receipt of such person shall be a sufficient discharge.

21) After an employee has received the maximum Sickness Disability Benefits herein provided for an employee of his term of employment, he shall not be eligible to further benefits on account of sickness until he shall have performed his duties as an employee of the Company for a continuous period of thirteen weeks. If an employee who has received Sickness Disability Benefits shall subsequently become disabled by reason of accidental injury arising out of and in the course of employment by the Company, or if an employee who has received Accident Disability Benefits shall subsequently become disabled by reason of sickness, the period during which benefits are payable on account of such subsequent disability shall not be affected by the preceding period of disability.

22) Benefits shall not be payable for both accident and sickness at the same time to the same person.

23) Granting a pension to an employee or retiring him from employment without a pension during a period of disability benefits shall not terminate or decrease his dis- [fol. 3308] ability benefits. Granting a pension during a period of disability benefits, however, shall not entitle the employee to any payments on account of the pension, while the disability benefits continue, unless the amount of the pension is greater than the amount of the disability benefits, in which case only such amount shall be paid on account of the pension as may be necessary to make the total amount paid to such employee on account of the disability benefits and the pension equal to the amount he would have received if the pension alone had been paid.

24) "Rate of Pay" as used in these Regulations shall mean the time rate at which the employee is entitled to receive payment for services under the contract of hiring, provided, however, that if the employee's compensation is ordinarily computed on other than a time basis, the employee's average compensation (not including compensation for overtime) for so much of the preceding three months as he has been in the service of the Company, may be taken as determining the rate of pay, provided the rate thus computed is not less than the employee's time rate.

25) If an employee of this Company is an employee also of one or more other companies which have adopted plans for employees' pensions, disability benefits and death benefits, similar to that herein described and which have entered into arrangements with this Company, directly or indirectly, for an interchange of the benefit obligations to which the companies may be subject under such plans, any pension, disability benefits or death benefit to which such employee or his beneficiaries may become entitled under the plans shall be computed on the basis of the total combined pay which the employee is receiving from all such companies and, except in the case of injury or death due to accident arising out of and in the course of employment by any of such companies, shall be pro-rated among the companies on the basis of the pay the employee was receiving from each company, and this Company shall only pay its share thus determined. Any maximum or minimum amounts fixed by these Regulations for pensions, disability benefits or death benefits shall apply to the total amount payable by all companies and not to the portion payable by this Company.

26) In case of accident resulting in injury to or death of an employee which entitles such employee or his beneficiaries to benefits under these Regulations, he or they may elect to accept such benefits or to prosecute such claims at law as he or they may have against the Company. If election is made to accept the benefits, such election shall be in writing and shall release the Company from all claims and demands which the employee or his beneficiaries may have against it, otherwise than under these Regulations, on account of such accident. If any persons other than the beneficiaries under these Regulations might

[fol. 3309] legally assert claims against the Company on account of the death of the employee, no part of the death benefit under these Regulations shall be due or payable until there have also been delivered to the Committee good and sufficient releases of all claims, arising from or growing out of the death of the employee, which such other persons might legally assert against the Company. The Committee, in its discretion, may require that the elections and releases above described shall release any other company, connected with the accident, with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations. The right of the employee to accident disability benefits under these Regulations shall lapse if election to accept such benefits, as above provided, is not made within sixty days after injury, or within such greater time as the Committee shall, by resolution duly entered on its records, fix for the making of such election.

27) Should claim other than under these Regulations be presented or suit brought against the Company or against any other company with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations, for damages on account of injury or death of an employee, nothing shall be payable under these Regulations on account of such injury or death except as provided in Paragraph 28 of this Section; provided, however, that the Committee may, in its discretion and upon such terms as it may prescribe, waive this provision if such claims be withdrawn or if such suit be discontinued.

28) In case any judgment is recovered against the Company or any settlement is made of any claim or suit on account of the injury or death of an employee, and the amount which would otherwise have been payable under these Regulations is greater than the amount paid on account of such judgment or settlement, the difference between the two amounts may, in the discretion of the Committee, be distributed to the beneficiaries who would have received benefits under these Regulations, except that no party to any such suit against the Company shall be entitled to any portion thereof.

29) In case any benefit or pension shall be payable under the laws now in force or hereafter enacted of any State or Country to any employee of the Company or his beneficiaries under such laws, the excess only, if any, of the amount prescribed in these Regulations above the amount of such benefit or pension prescribed by law shall be the benefit or pension payable under these Regulations. In those cases where because of differences in the beneficiaries, or differences in the time or methods of payment, or otherwise, whether there is such excess or not is not ascertainable by mere comparison but adjustments are necessary, the Committee in its discretion is authorized to deter- [fol. 3310] mine whether or not in fact any such excess exists, and in case of such excess, to make the adjustments necessary to carry out in a fair and equitable manner the spirit of the provision for the payment of such excess.

30) The Committee shall publish annually to the employees a report of the operations under the Plan.

Section 9. Interchange of Benefit Obligations:

Agreement may be made by this Company with any Associated or Allied Company for an interchange with that Company of the benefit obligations to which such Company may be subject under a plan for employees' pensions, disability benefits and death benefits similar to that herein adopted. The general provisions of such agreement will be:

a) That as long as such agreement remains in force the Plan of such Associated or Allied Company shall be maintained so as to conform to the Plan of this Company.

b) That advance provision for the payment of service pensions shall be made by such Associated or Allied Company in such amounts as may be necessary to provide for and fulfill all requirements of the Plan as in effect from time to time.

c) That an employee's term of employment, as hereinbefore defined, shall include employment not only in this Company, but also in any other Company with which reciprocal agreements under this Plan shall have been made by this Company.

d) That in case of consolidation or merger with another Company having a similar employees' benefit plan, the Pen-

sion Funds of the Companies consolidated or merged shall be combined.

Section 10. Changes in Plan:

The Committee, with the consent of the President and subject to the approval of the Board of Directors, may from time to time make changes in the Plan set forth in these Regulations, but such changes shall not affect the rights of any employee, without his consent, to any benefit or pension to which he may have previously become entitled hereunder.

[fol. 3311] Retain this pamphlet for reference. In the event of sickness, accident or any other case requiring attention, report facts at once to your immediate superior.

[fol. 3312] EXHIBIT A-208

Plan for Employees' Pensions, Disability Benefits, and Death Benefits

American Telephone & Telegraph Co. and Associated Companies

Bell System

Illinois Bell Telephone Company, American Telephone and Telegraph Company, and Associated and Allied Companies

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

[fol. 3313] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

This pamphlet describes the "Plan for Employees' Pensions, Disability Benefits, and Death Benefits" of the Illinois Bell Telephone Company, and the word "Company" in the text of the Plan on pages 5 to 20 means said Company.

A similar Plan has been adopted by the American Telephone and Telegraph Company, its other Associated Operating Companies (in the United States) and by the Western Electric Company, Incorporated, and agreements for interchange of benefit obligations have been made as provided in Section 9 of the Plan.

Summary of Benefits

A brief summary of benefits to which employees may become entitled is given below. The complete plan is contained in sections headed "Plan for Employees' Pensions, Disability Benefits and Death Benefits," pages 5 to 20.

1. Pensions:

1) Retirement on pension is provided for employees coming under the classes listed below. Employees in Class A may be retired on a service pension either at their own request or at the discretion of the Committee. Employees in Classes B and C may be retired on a service pension only at the discretion of the Committee and with the approval of the President or Vice-President.

[fol. 3314] a) Service Pensions:

Class A—Employees whose age is 60 years or more (females 55 or more) and whose term of employment has been 20 years or more.

Class B—Employees whose age is 55 to 59 years (females 50 to 54) and whose term of employment has been 25 years or more.

Class C—Employees whose age is less than 55 years (females less than 50) and whose term of employment has been 30 years or more.

b) Disability Pensions:

Class D—Any employee whose term of employment has been 15 years or more and who becomes totally disabled by reason of sickness may, at the discretion of the Committee and with the approval of the President or Vice-President, he granted a disability pension, which shall continue for such period only as the Committee may decide.

2) The amount of the annual pension in any of the above cases is 1% of the average annual pay for 10 years, multi-

plied by the number of years in the employee's term of employment.

Example: An employee whose term of employment at time of retirement has been thirty years and whose average pay for ten years has been $1,500 a year, will receive an annual pension equal to 30% of $1,500, or $450, payable in monthly amounts of $37.50.

NOTE.—The minimum pension will be $30 a month, but this is not to apply to disability pensions granted to employees of less than 20 years' service or to pensions granted to "part time" employees.

2. Accident Disability Benefits:

Total Disability—Full pay 13 weeks, half pay for remainder of disability. Maximum benefits to be $20 a week after six years of benefit payments.

Partial Disability—For first 13 weeks, 100% of loss in earning capacity; for remainder of disability, 50% of loss in earning capacity. Period of payments not to exceed six years in all.

[fol. 3315] 3. Sickness Disability Benefits:

These benefits begin on the eighth calendar day of absence on account of sickness and are as follows:

(a) For employees whose term of employment has been 10 years or more—Full pay 13 weeks; half pay 39 weeks.

(b) For employees whose term of employment has been 5 years or more, but less than 10 years—Full pay 13 weeks; half pay 13 weeks.

(c) For employees whose term of employment has been 2 years or more, but less than 5 years—Full pay 4 weeks; half pay 9 weeks.

NOTE.—Benefits are not provided in the Plan for sickness of employees of less than two years' service. In such cases such practice as the Company may establish from time to time will be followed.

4. Death Benefits:

These are payable only to wife (or husband) or dependent relatives of deceased employee and are:

(a) Sickness Death Benefits:

If employee's term of employment has been 10 years or more—One year's pay, not to exceed $2,000.

If employee's term of employment has been 5 years or more, but less than 10 years—Six months' pay, not to exceed $2,000.

(b) Accident Death Benefits:

Three years' pay, not to exceed $5,000, and the necessary expenses of burial, not to exceed $150.

Applications for Benefits

Applications for benefits shall follow the approved instructions of the Company. In default of such instructions applicants should promptly communicate with the Secretary of the Employees' Benefit Committee, to whom should also be addressed other communications with reference to the Plan.

[fol. 3316] Retirement Age

By action of the Directors of the Company a rule has been adopted which requires that on July 1, 1930, every officer or other employee who at that time is 65 years of age or over, shall retire from active service, and that thereafter every officer or other employee becoming 65 years of age shall retire at the end of the month in which that age is reached. Provision is made, however, that by specific action of the Directors the operation of this rule may be delayed from year to year with respect to any employee who is performing such services for the Company that continuation in active employment is deemed for the best interests of the service. Pensions will be voted to those persons retired by the operation of this rule who are eligible to pensions under the Plan at the date of retirement.

The above rule will supersede as of July 1, 1930, the existing rule providing for retirement at 70 years of age.

Employees' Record of Service

Each employee on entering the service of the Company will be given a copy of this pamphlet and, at that time or at such later time as is the practice of the Company, will be required to furnish for the files of the Committee, on a form supplied for that purpose, information regarding his previous service and the name of his beneficiary in case of death.

Leave of Absence, Lay-off, and Transfers

Attention is called to the provisions in regard to absences from the service contained in Paragraphs 5, 6 and 7 of Section 8 of the Plan. In order that all employees may be treated fairly, the Company has established routines which must be observed if the continuity of the employee's service is to be preserved in case of transfer from one Company to another and in case of any absence from the service without pay. Failure on the part of the employee to inform himself of these routines and to observe them may result in loss of credit for previous service. Employees may obtain information regarding the routines from their immediate superiors or from the Secretary of the Employees' Benefit Committee.

[fol. 3317] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

Section 1. Undertaking:

The Company undertakes, in accordance with these Regulations, to provide for the payment of definite amounts to its employees when they are disabled by accident or sickness or when they are retired from service, or, in the event of death, to their dependent relatives.

Section 2. Definitions:

1) In these Regulations the word "Plan" shall mean the Plan for Employees' Pensions, Disability Benefits and Death Benefits, as set forth in these Regulations.

2) The word "Company" shall mean the Company or Companies named on the first page or its or their successors.

3 The words "President" and "Board of Directors" or "Board" shall mean the President and Board of Directors respectively of the Company.

4) The word "Committee" shall mean the persons appointed by the Board to administer the Plan.

5) The word "Employees" shall mean those persons who receive a regular and stated compensation from the Company other than a pension or retainer.

6) The expression "term of employment" shall mean period of continuous employment in the service of the Company, or of the Company, the American Telephone and Telegraph Company, the Associated and Allied Companies with which agreements have been made by the American Company for interchange of benefit obligations and any Bell Company predecessor of any of said companies, or in the service of any one or more of said companies. Service in companies subsidiary to, allied with or predecessors of any one of the aforementioned companies will be considered, in determining "term of employment," as service in such aforementioned company, in all cases authorized by appropriate action on the part of such company and approved by the Employees' Benefit Committee of the American Company.

[fol. 3318] Section 3. Committee:

1) There shall be a Committee of five (5) appointed by the Board to serve during its pleasure, which Committee shall be called the Employees' Benefit Committee. This Committee shall be charged with the administration of the Plan.

2) The Committee shall have the specific powers elsewhere herein granted to it and shall have such other powers as may be necessary in order to enable it to administer the Plan.

3) It shall determine conclusively for all parties all questions arising in the administration of the Plan.

4) It shall be empowered to authorize disbursements according to these Regulations.

5) It shall adopt such By-Laws and rules of procedure as it may find necessary, with the approval of the President and subject to the provisions of Section 9 of these Regulations.

6) It shall be empowered to employ a Secretary and such other assistants as may be required in the administration of the Plan.

7) The expenses of the Committee in administering the Plan shall be borne by the Company.

Section 4. Pensions:

1) On and after January 1, 1913:

a) All male employees who have reached the age of sixty years and whose term of employment has been twenty or more years and all female employees who have reached the age of fifty-five years and whose term of employment has been twenty or more years may, at their own request, or at the discretion of the Committee, be retired from active service and become eligible to pensions, which pensions are designated "service pensions."

b) Any employee whose term of employment has been thirty years or more, or any male employee who has reached the age of fifty-five and whose term of employment has been twenty-five or more years, or any female employee who has reached the age of fifty years and whose term of employment has been twenty-five or more years may, at the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, be retired from active service and granted a pension, which pension is also designated a "service pension."

c) At the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, any employee who has become totally disabled as a result of sickness or of injury, other than by [fol. 3319] accidental injury arising out of and in the course of employment by the Company, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension, which pension is

designated a "disability pension.". If a disability pension is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall thereupon be eligible to benefits under these Regulations, and the period of absence on pension shall be considered as a leave of absence and not as a break in the continuity of the employee's service.

2) The annual pension allowance for each employee retired with a pension on account of age, length of service or disability shall be as follows:

For each year of his term of employment, one per centum (1%) of the average annual pay during the ten years next preceding retirement, provided, however, that the Committee may, at its discretion, base such pension upon the average annual pay of the ten consecutive years of service during which the retired employee was paid the highest rate of wages. The minimum pension shall be Thirty Dollars ($30) per month, provided, however, that at the discretion of the Committee the pension allowance may be less than Thirty Dollars ($30) per month, but not less than the allowance computed as aforesaid, in the case of pensions granted under Paragraph 1 (c) of this Section to employees of less than twenty years' service, and in cases in which, in the opinion of the Committee, the days or hours constituting the employee's normal service have not been adequate to constitute full time service, during the number of years required to establish eligibility to pension in the class under which the employee is retired.

3) Pensions shall be payable monthly or at such shorter periods as the Committee may determine in each case.

4) Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Pensions granted under any of the conditions described in these Regulations may, in the discretion of the Committee, be continued to dependent relatives for a period which shall not extend beyond the end of the twelfth calendar

[fol. 3320] month following the death of the pensioner, provided, however, that the total amount paid to all such dependent relatives shall not exceed Two Thousand Dollars ($2,000) in any one case.

5) Regular employment under a salary with this Company or with any company with which arrangements for interchange of benefit obligations, as described in Section 9 of these Regulations, have been made directly or indirectly, shall suspend the right of a retired employee to pension payments during the period he continues in such employment.

6) The Committee shall furnish quarterly to the President a list of all employees qualified to receive pensions.

7) The Committee shall notify all employees of their eligibility to retire on service pensions at their own request, as they become eligible.

8) In order to meet its obligations to pay service pensions (defined in Paragraphs 1 (a) and 1 (b) of this Section) granted to take effect under the Plan, the Company, effective January 1, 1927, established a trust fund to be known as the "Pension Fund." It undertakes to maintain this Fund by periodic charges to operating expenses and payments to the Fund in such amounts that when an employee becomes eligible under the Plan to receive a service pension, there will be available in the Pension Fund an amount sufficient to provide for him a pension in the amount stated in the Plan. It has also made adequate provision in the Pension Fund for the payment of all service pensions granted under the Plan to take effect prior to January 1, 1927. The Pension Fund shall be held by a trustee or trustees for service pension purposes only and shall be disbursed as directed by the Company from time to time. In case of termination of the Plan, or in case of revocation or other termination of said trust, the Company undertakes to preserve the integrity of the Pension Fund as a trust fund to be applied solely to service pension purposes in the manner which in its judgment will enable it to meet its service pension obligations most effectively. All service pensions granted to take effect under the Plan shall be paid from the Pension Fund.

9) All Disability Pensions (defined in Paragraph 1 (c) of this Section) and all payments to dependent relatives of deceased pensioners (defined in Paragraph 4 of this Section) shall be a charge to the operating expense accounts of the Company when and as paid.

Section 5. Accident Disability Benefits:

1) All employees of the Company on January 1, 1913, and thereafter shall be qualified to receive payments under [fol. 3321] these Regulations on account of physical disability to work by reason of accidental injury (not including the accidental injuries specified in Paragraphs 14 and 15 of Section 8 of these Regulations) arising out of and in the course of employment by the Company. Such payments are hereinafter referred to as Accident Disability Benefits.

2) Accident Disability Benefits shall be as follows:

a) Total Disability—Full pay for any period of total disability during the first thirteen weeks of disability, and half pay for any period of total disability after the first thirteen weeks of disability, provided, however, that after the expiration of six years of disability payments, the benefits shall not exceed Twenty Dollars ($20) a week.

b) Partial Disability—For any period of partial disability during the first thirteen weeks of disability, 100% of the difference between full pay at time of injury and wages which, in the judgment of the Committee, the employee is capable of earning; for any period of partial disability after the first thirteen weeks of disability, 50% of difference between full pay at time of injury and wages which, in the judgment of the Committee, employee is capable of earning, provided, however, that no payments for partial disability shall be made after the expiration of six years of disability payments.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week commonly regarded as constituting full time service, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began.

3) If after a period of total disability the disability becomes partial or after a period of partial disability the

disability becomes total, the amount of the benefits shall be changed accordingly.

4) In ascertaining the period during which Accident Disability Benefits shall be paid, the period of disability shall be taken as commencing upon the first day on which, because of disability, a full day's wages is not paid. Successive periods of disability from accident shall be counted together if from the same accident and separately if from different accidents.

5) Accidental injuries shall be considered as arising out of and in the course of employment only where the injury has resulted solely from accident during and in direct connection with the performance of duties to which the employee is assigned in the service of the Company, or which he is directed to perform by proper authority, or in voluntarily protecting the Company's property or interests, and [fol. 3322] there must be a clear and well established history of the cause and circumstances of injury accidentally inflicted, and they must be sufficient to produce the alleged injury, and there must be satisfactory evidence that such injury renders the employee unable to perform his duty in the service of the Company.

6) In case of accidental injury to any employee arising out of and in the course of employment by the Company, resulting in permanent loss of a bodily member or loss of its use, special benefits, in lieu of all other benefits on account of such injury, may be awarded by the Committee, provided, however, that such special benefits shall not exceed the payment hereinafter authorized to be paid in case of death from accidental injury, except by specific authority from the Board.

7) In case of accidental injury to any employee arising out of and in the course of employment by the Company, the necessary expenses for "first aid" shall, on approval of the Committee, be paid by the Company. In addition the Company will pay for necessary surgical treatment, but no employee shall have authority to contract any bills against the Company or the Committee and nothing herein shall be held to mean or imply that the Company will be responsible for such bills as an employee may contract or his surgeon may charge. Bills for surgical treatment

must be itemized before they will be considered by the Committee. The decision as to whether in any case surgical treatment was necessary and as to what constitutes surgical treatment shall rest with the Committee. At its discretion the Committee may authorize payment of other expenses necessary for the proper care and treatment of the employee, during such period as the Committee may determine.

8) All Accident Disability Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 6. Sickness Disability Benefits:

1) All employees of the Company on January 1, 1913, or thereafter shall, after a term of employment of 2 years, be qualified to receive payments under these Regulations on account of physical disability to work by reason of sickness. Such payments are hereinafter referred to as Sickness Disability Benefits. Such payments shall terminate when disability ceases and shall in no case extend beyond the periods hereinafter mentioned. For the purposes of these Regulations, sickness shall include injury other than accidental injury arising out of and in the course of employment by the Company. This Section is subject, however, to the exceptions stated in Paragraph 14 of Section 8 of these Regulations.

[fol. 3323] 2) Sickness Disability Benefits shall be as follows:

a) If term of employment has been 10 years or more—full pay 13 weeks; half pay 39 weeks.

b) If term of employment has been 5 to 10 years—full pay 13 weeks; half pay 13 weeks.

c) If term of employment has been 2 to 5 years—full pay 4 weeks; half pay 9 weeks.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week constituting the employee's normal service under his contract of hiring, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began, provided, however, that the benefits shall at

no time exceed the pay which the employee would receive, based on his rate of pay and the general schedule of hours per week constituting a full week's service at the time the disability began.

3) Sickness disability benefits shall begin on the eighth calendar day of absence on account of disability, provided, however, that if an employee has received sickness disability benefits for any period and is again absent on account of sickness within two weeks after the termination of such period, any benefits on account of such further sickness shall begin on the first day of absence instead of on the eighth day.

4) Successive periods of sickness disability shall be counted together as one period in computing the period during which the employee shall be entitled to benefits, except that any sickness occurring after an employee has been continuously engaged in the performance of duty for thirteen weeks shall be considered as a new sickness and not as part of any disability which preceded such period of thirteen weeks.

5) Employees shall not be entitled to receive sickness disability benefits for time for which any wages are paid them by the Company.

6) All Sickness Disability Benefits shall be a charge to the operating expense accounts of the Company when and as paid.

Section 7. Death Benefits:

1) In the event of the death of any employee, resulting from accidental injury on or after January 1, 1913, arising out of and in the course of employment by the Company, there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations) a Death Benefit which shall equal three years' wages, as hereinafter in this Section defined, but which shall in no case exceed Five Thousand Dollars ($5,000). In addition [fol. 3324] to the Death Benefit, the necessary expenses of the burial of the deceased employee, not exceeding One Hundred and Fifty Dollars ($150), shall be paid.

2) In the event of the death of any employee, on or after January 1, 1913, resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, if the employee's term of employment has been five years or more there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations), a Death Benefit, the amount of which shall be:

a) If employee's term of employment has been 5 to 10 years, six months' wages as hereinafter in this Section defined.

b) If employee's term of employment has been 10 years or more, one year's wages as hereinafter in this Section defined.

c) The maximum Death Benefit in any such case shall be Two Thousand Dollars ($2,000).

3) The Death Benefit, in case of an employee's death by either accident or sickness, shall be paid only to the wife (or husband) or dependent relatives of the employee and such payment shall be made in the following order; provided, however, that upon written application of an employee, and good cause shown, the Committee may authorize a change in such order of payment, but no persons other than the beneficiaries herein designated shall receive payment on account of such benefit:

First. To the wife (or husband) of the employee.

Second. If there be no wife (or husband) of such employee living at the employee's death, then to such child or children of the employee, and such issue of any deceased child, as were dependent upon such deceased employee for their support at the time of his or her death, in equal shares, such issue of said deceased child, if any, to take equally among them the share said deceased child would have taken if living and dependent.

Third. If there be no children or issue of deceased children dependent upon the employee as aforesaid, then among such other relatives, if any, as were dependent upon the deceased employee for support at the time of his death, and in such proportions as the Committee may decide. If any of such other relatives were only partially dependent

upon the deceased employee for support, the death benefit payable to such partially dependent relatives shall be such part of the total death benefits as may be determined by the Committee to be proportionate to the degree of dependence, provided, however, that any relative to whose support the deceased employee was, at the time of his death, regularly contributing an amount equal to 20% or more of his wages, such contribution being necessary for the sup-[fol. 3325] port of such relative, shall be considered to have been wholly dependent upon the deceased employee.

Fourth. If there be no such relative dependent as aforesaid living at such employee's death, the benefit shall lapse, but so much thereof as may be required to defray the necessary expenses incident to the death of the employee and the disability immediately preceding, together with the necessary expenses, not exceeding, however, One Hundred and Fifty Dollars ($150) of his burial, shall be paid by the Company if authorized by the Committee. In case notice in writing of the existence of such wife, husband, child, issue of a child, or dependent relative shall not be served on the Committee within one year after such employee's death, it shall be treated as conclusive that there are no such persons in existence.

4) All claims for death benefits, to be valid, must be made in writing within one year from the date of the death on which the claim is based.

5) Claims for death benefits will be payable within thirty days after the required evidence of their validity is furnished.

6) A part of a death benefit, not exceeding Two Hundred Dollars ($200), may be paid before the final settlement, to meet urgent expenses incident to the death and preceding disability of an employee, to be deducted from the total amount upon final payment.

7) If any of the persons to whom the death benefit is payable are incompetent to give authority for such payments or cannot be found, or are in a foreign country, or for other reasons cannot be conveniently communicated with, the Committee may make such payments, as a part of the death benefit, as in its judgment may be reasonable, for the proper burial of the deceased employee and the pay-

ment of necessary expenses incident to his death and disability immediately preceding.

8) If an employee dies during disability from accident or sickness, the death benefit which may be payable shall not be subject to deduction of previous payments of disability benefits.

9) Death benefits shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases Death Benefits shall be payable provided the employee has not been pensioned, and provided the Committee has been furnished, from time to time, such proof of continued disability as it may require, and provided the Committee has been permitted to make or have made, by a physician, such examination of the disabled person as it may deem necessary in order to ascertain his condition.

[fol. 3326] 10) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death from sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

11) All Death Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 8. General Provisions:

1) Neither the action of the Board of Directors in establishing this plan for employees' pensions, disability benefits and death benefits, nor any action hereafter taken by the Board or the Committee shall be construed as giving to any officer, agent or employee a right to be retained in the service of the Company or any right or claim to any pension or other benefit or allowance after discharge from the service of the Company, unless the right to such pension or benefit has accrued prior to such discharge. No em-

ployee shall have any right to a service pension by reason of service less than that specified in Paragraphs 1 (a) and 1 (b) of Section 4 of these Regulations, nor shall any employee have any right in the Pension Fund unless a service pension authorized by the Committee under the Plan has not been paid. No employee shall have any right against the Company to any benefit under the Plan except for the amount to which the employee has theretofore become entitled and which the Committee has directed be paid to that employee under the Plan.

2) Assignment of pensions or other benefits under these Regulations will not be permitted or recognized.

3) Pensions or disability benefits may be suspended or terminated, in the discretion of the Committee and the President, with the approval of the Board of Directors, in cases of conduct prejudicial to the interests of the Company.

4) In all questions relating to the term of employment and rates of pay of employees, the decision of the Committee, based upon these Regulations and upon the records of the Company, shall be final, provided, however, that as to service prior to June 1, 1914, the Committee shall have discretion to base its decisions upon the general intent of these Regulations and upon such information as may be obtainable from any source. As to service on or after June 1, 1914, this discretion shall not exist and the Committee shall base its decisions strictly upon the facts in the case as shown by the records of the Company.

5) Any absence from the service without pay, other than [fol. 3327] absence during a period of disability benefits, or leave of absence or temporary lay-off as defined in Paragraphs 6 and 7 of this Section, shall be considered as a break in the continuity of service unless the Board of Directors specifically authorizes the Committee to consider such absence as a leave of absence, and if any person is re-employed after such a break in the continuity of his service, his term of employment shall be reckoned from the date of such re-employment.

6) Leave of absence shall not constitute a break in the continuity of service, but in the case of any such absence

prior to June 1, 1914, which was of more than six months' duration, the period of absence shall be deducted in computing term of employment. On and after June 1, 1914, leave of absence, for the purposes of these Regulations, shall mean leave formally granted in conformity with the rules of the Company, as adopted from time to time, and, except in the case of leave granted by the Board of Directors as provided in Paragraph 5 of this Section and leave on account of continued disability following the expiration of a period of disability benefits, such leave must be obtained at or before the time the absence begins. Leave of absence for any period in excess of one month shall not be effective unless approved in writing by the Committee, and in any case in which such approval is given, the Committee shall indicate whether or not the period of absence is to be deducted in computing term of employment and whether during the absence the employee shall be eligible to benefits under these Regulations. Absence following the expiration of a period of disability benefits shall be considered as a break in the continuity of service unless the employee is granted a leave of absence, provided, however, that in its discretion, the Committee may consider any such absence as a leave of absence, if satisfactory evidence is furnished that the disability was continuous during the entire period of absence.

7) Temporary lay-off on account of reduction of force shall not be considered as a break in the continuity of service, but when the period of absence from such cause exceeds six months in any twelve consecutive months, the entire period of the absence shall be deducted in computing term of employment, and all subsequent periods of lay-off shall be so deducted until the employee shall have been continuously engaged in the performance of duty for a period of twelve consecutive months. On and after June 1, 1914, a period of lay-off shall not be considered as temporary unless the employee is re-employed within such period as the rules of the Company, as adopted from time to time, may require, not in any case exceeding two years. If the employee is not thus re-employed, the continuity of his service shall be deemed to have been broken. No benefits under these Regulations shall be payable during a period of lay-off.

[fol. 3328] 8) Every employee who shall be absent from duty on account of sickness or injury must at once notify his immediate superior, and the employee shall not be entitled to benefits for time previous to such notice, unless delay shall be shown to have been unavoidable and satisfactory evidence of disability is furnished.

9) All claims for disability benefits, to be valid, must be made within sixty days from the date of accident or from the first day of absence on account of sickness.

10) Disabled employees wishing to leave home shall obtain from the Committee written approval of absence for a specified time and furnish it satisfactory proof of disability while absent, otherwise no benefits shall be paid for such period of absence.

11) It shall be the duty of disabled employees, when their condition and location do not prevent, to call on the Committee or the Committee's representative at such times as the Committee may require.

12) A disabled employee shall not be entitled to benefits if he declines to permit the Committee to make or have made by a physician, from time to time, such examination as the Committee may deem necessary in order to ascertain the employee's condition, or if he fails to give proper information respecting his condition, or if he prevents the necessary examination by absenting himself from home without arranging with the Committee, or giving satisfactory reasons for not doing so and furnishing the necessary evidence, or if he fails to comply with notice to meet the Committee, at its offices or elsewhere, when his condition and location permit of his doing so.

13) Disabled employees must take proper care of themselves and have proper treatment. Benefits will be discontinued to employees who refuse or neglect to follow the recommendations of the Committee.

14) In case of disability or death directly or indirectly due to intoxication or to the use of alcoholic liquors as a beverage or to the use of stimulants or narcotics or to unlawful acts or immoralities or to fighting, unless in self-

defense against unprovoked assaults, or to other encounter, such as wrestling or scuffling, or to injury received in any brawl or in any liquor saloon, gambling house or other disreputable resort, or to the wilful intent of the employee to injure himself or another, or to venereal disease, no right to benefits under these Regulations shall exist except at the discretion of the Committee.

15) Death or disability resulting from infection of a cut, abrasion, scratch, puncture, or other wound not immediately disabling and not reported at the time of the occurrence causing the injury, or from sunstroke or frostbite, shall not be classed as due to accident, except at the discretion of the Committee.

[fol. 3329] 16) Payments under the Plan shall be made in conformity with the financial methods of the Company and on orders of or bills prepared by the Committee or such other persons as may be designated by the Committee.

17) Disability benefits will ordinarily be paid at the same intervals of time as would govern the payment of wages to the employee if he were in the performance of duty, but at the discretion of the Committee benefits on account of continued disability may be paid monthly and on account of disability for short periods when the amounts are ascertained.

18) In case of any grave injury or chronic sickness, if the employee requests that a lump sum be paid in full settlement of all claims under the Plan and against the Company on account of such injury or sickness, the Committee may, in its discretion, make full and final settlement with the employee by commuting the benefit payments into a single lump sum payment, which payment shall be the present value computed on a fair basis, of the benefits to which the employee would become entitled during such period as his disability may reasonably be expected to continue.

19) Disability benefits remaining unpaid at the death of an employee shall be payable to the person or persons entitled to receive the death benefit, and in like proportions.

20) Benefits payable to an employee unable to execute a proper receipt may be paid to a relative or other proper

person, selected by the Committee, to use for the benefit of the employee and the receipt of such person shall be a sufficient discharge.

21) After an employee has received the maximum Sickness Disability Benefits herein provided for an employee of his term of employment, he shall not be eligible to further benefits on account of sickness until he shall have performed his duties as an employee of the Company for a continuous period of thirteen weeks. If an employee who has received Sickness Disability Benefits shall subsequently become disabled by reason of accidental injury arising out of and in the course of employment by the Company, or if an employee who has received Accidental Disability Benefits shall subsequently become disabled by reason of sickness, the period during which benefits are payable on account of such subsequent disability shall not be affected by the preceding period of disability.

22) Benefits shall not be payable for both accident and sickness at the same time to the same person.

23) Granting a pension to an employee or retiring him from employment without a pension during a period of disability benefits shall not terminate or decrease his disability benefits. Granting a pension during a period of dis- [fol. 3330] ability benefits, however, shall not entitle the employee to any payments on account of the pension, while the disability benefits continue, unless the amount of the pension is greater than the amount of the disability benefits, in which case only such amount shall be paid on account of the pension as may be necessary to make the total amount paid to such employee on account of the disability benefits and the pension equal to the amount he would have received if the pension alone had been paid.

24) "Rate of Pay" as used in these Regulations shall mean the time rate at which the employee is entitled to receive payment for services under the contract of hiring, provided, however, that if the employee's compensation is ordinarily computed on other than a time basis, the employee's average compensation (not including compensation for overtime) for so much of the preceding three months as he has been in the service of the Company, may be taken as determining the rate of pay, provided the rate thus computed is not less than the employee's time rate.

25) If an employee of this Company is an employee also of one or more other companies which have adopted plans for employees' pensions, disability benefits and death benefits, similar to that herein described and which have entered into arrangements with this Company, directly or indirectly, for an interchange of the benefit obligations to which the companies may be subject under such plans, any pension, disability benefits or death benefit to which such employee or his beneficiaries may become entitled under the plans shall be computed on the basis of the total combined pay which the employee is receiving from all such companies and, except in the case of injury or death due to accident arising out of and in the course of employment by any of such companies, shall be pro-rated among the companies on the basis of the pay the employee was receiving from each company, and this Company shall only pay its share thus determined. Any maximum or minimum amounts fixed by these Regulations for pensions, disability benefits or death benefits shall apply to the total amount payable by all companies and not to the portion payable by this Company.

26) In case of accident resulting in injury to or death of an employee which entitles such employee or his beneficiaries to benefits under these Regulations, he or they may elect to accept such benefits or to prosecute such claims at law as he or they may have against the Company. If election is made to accept the benefits, such election shall be in writing and shall release the Company from all claims and demands which the employee or his beneficiaries may have against it, otherwise than under these Regulations, on account of such accident. If any persons other than the beneficiaries under these Regulations might legally assert [fol. 3331] claims against the Company on account of the death of the employee, no part of the death benefit under these Regulations shall be due or payable until there have also been delivered to the Committee good and sufficient releases of all claims, arising from or growing out of the death of the employee, which such other persons might legally assert against the Company. The Committee, in its discretion, may require that the elections and releases above described shall release any other company, connected with the accident, with which arrangements have been made, directly or indirectly, for interchange of benefit obligations,

as described in Section 9 of these Regulations. The right of the employee to accident disability benefits under these Regulations shall lapse if election to accept such benefits, as above provided, is not made within sixty days after injury, or within such greater time as the Committee shall, by resolution duly entered on its records, fix for the making of such election.

27) Should claim other than under these Regulations be presented or suit brought against the Company or against any other company with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations, for damages on account of injury or death of an employee, nothing shall be payable under these Regulations on account of such injury or death except as provided in Paragraph 28 of this Section; provided, however, that the Committee may, in its discretion and upon such terms as it may prescribe, waive this provision if such claims be withdrawn or if such suit be discontinued.

28) In case any judgment is recovered against the Company or any settlement is made of any claim or suit on account of the injury or death of an employee, and the amount which would otherwise have been payable under these Regulations is greater than the amount paid on account of such judgment or settlement, the difference between the two amounts may, in the discretion of the Committee, be distributed to the beneficiaries who would have received benefits under these Regulations, except that no party to any such suit against the Company shall be entitled to any portion thereof.

29) In case any benefit or pension shall be payable under the laws now in force or hereafter enacted of any State or Country to any employee of the Company or his beneficiaries under such laws, the excess only, if any, of the amount prescribed in these Regulations above the amount of such benefit or pension prescribed by law shall be the benefit or pension payable under these Regulations. In those cases where because of differences in the beneficiaries, or differences in the time or methods of payment, or otherwise, whether there is such excess or not is not ascertainable, by mere comparison but adjustments are necessary, the Committee in its discretion is authorized to determine

[fol. 3332] whether or not in fact any such excess exists, and in case of such excess, to make the adjustments necessary to carry out in a fair and equitable manner the spirit of the provision for the payment of such excess.

30) The Committee shall publish annually to the employees a report of the operations under the Plan.

Section 9. Interchange of Benefit Obligations:

(This Section makes provision for agreements between the American Telephone and Telegraph Company and its Associated and Allied Companies for an interchange of the benefit obligations to which such companies may be subject under their Plans for Employees' Pensions, Disability Benefits and Death Benefits.

Under the provisions of such agreements:

a) Such benefit plans will be maintained on a uniform basis by all of the companies.

b) An employee's term of employment, as defined in the Plans will be computed by each of such companies on the basis of employment not only in its own service but also in the service of any other company, party to such an agreement.

c) In cases of consolidations of such companies their Pension Funds will likewise be consolidated.)

Section 10. Changes in Plan:

The Committee, subject to the provisions of Section 9, with the consent of the President and subject to the approval of the Board of Directors, may from time to time make changes in the Plan set forth in these Regulations, but such changes shall not affect the rights of any employee, without his consent, to any benefit or pension to which he may have previously become entitled hereunder.

[fol. 3333] Retain this pamphlet for reference. In the event of sickness, accident or any other case requiring attention report facts at once to your immediate superior.

[fol. 3334] EXHIBIT A-209

Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Illinois Bell Telephone Company

[fol. 3335] Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Summary of Amended Provisions

(This Summary supersedes paragraph 4 on page 3 of the Benefit Plan pamphlet, and covers only certain of the new provisions. For an exact statement of all provisions see the text of the amendments in the following pages.)

Death Benefits:

If the employee leaves a wife who was living with him at the time of his death, a husband who was physically or mentally incapable of self-support and who was actually supported by the employee at the time of her death, or a child under the age of 18 years (or over that age if physically or mentally incapable of self-support) who was actually supported by the employee at the time of death, the amount to be awarded is the maximum specified in the schedules.

In all other cases the amounts to be awarded (within the limits indicated by the schedules) and the persons to whom the payments shall be made are subject to the discretion of the Benefit Committee.

Beneficiaries are limited to a wife (or husband), dependent children and other dependent relatives of the deceased.

The Death Benefit schedules are:

a) Accident Death Benefits:

Regardless of the employee's term of employment an Accident Death Benefit not to exceed the amount specified below may be paid in case of death by accident arising out of and in the course of employment:

Three years' pay, not to exceed $5,000; provided, however, that if a greater amount could have been paid under

the Sickness Death Benefit schedule below had the employee died from sickness rather than from accident, the maximum of $5,000 is increased to the amount of the Sickness Death Benefit.

In addition to the Accident Death Benefit the necessary expenses of burial, not to exceed $250, will be paid.

[fol. 3336] b) Sickness Death Benefits:

If the deceased employee had a term of employment of two years of more, a Sickness Death Benefit not to exceed the maximum shown below may be paid:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payments in Case of Death of Pensioners:

In the discretion of the Committee payments may be made to the wife (or husband), dependent children or other dependent relatives of the deceased. The maximum amount of such payments shall not exceed the amount which could have been paid under the Sickness Death Benefit schedule if the pensioner had died on his last day of active service.

Manner of Payment:

The payments described above will be made in monthly amounts, unless otherwise specified by the Committee, and will cease upon the death of the beneficiary.

Text of Amended Provisions

Entire Section 7 of the Plan is amended to read as follows:

Death Benefits:

(1) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from accidental

injury, on or after January 1, 1913, arising out of and in the course of employment by the Company, hereinafter referred to as death by accident, there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) an Accident Death Benefit, the maximum amount of which shall be three years' wages, as defined in Paragraph 8 of this Section, but which shall not exceed Five Thousand Dollars ($5,000); provided, however, that if the maximum Sickness Death Benefit which could have been paid under the provisions of the next suc- [fol. 3337] ceeding paragraphs had said employee died from sickness rather than from accidental injury, is in excess of said limit of Five Thousand Dollars ($5,000), said limit shall be increased to the amount of said mixiumum Sickness Death Benefit. Payment of the Accident Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and Paragraph 29 of Section 8 and elsewhere in these Regulations, shall be made to the employee's beneficiaries as provided in Paragraph 4 of this Section. In addition to the Death Benefit the necessary expenses of the burial of the deceased employee, not exceeding Two Hundred and Fifty Dollars ($250), shall be paid.

(2) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, hereinafter referred to as death by sickness, if the employee's term of employment has been two years or more there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) a Sickness Death Benefit which shall not be in excess of the amount specified in the following schedule:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payment of the Sickness Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and elsewhere in these Regulations, shall be made to the employee's beneficiaries, as provided in Paragraph 4 of this Section.

(3) In the event of the death on or after January 1, 1930 of any person who at the time of death is receiving a pension under these Regulations, the Committee in its discretion may authorize further payments to the wife (or husband) or dependent relatives of the pensioner the total amount of which shall not exceed the maximum amount which could have been paid as a Sickness Death Benefit under the terms of Paragraph 2 of this Section if the pensioner had died on his last day of active service.

(4) The persons who may be beneficiaries of the Accident or Sickness Death Benefit or of payments on the death of a pensioner hereunder are limited to the wife (or hus- [fol. 3338] band) and the dependent children and other dependent relatives of the deceased. The amount to be paid in each case and the beneficiary or beneficiaries who shall receive the same, and the share which each shall receive, shall be determined by the Committee, subject to the following provisions and to the provisions of Paragraph 5 of this Section.

(a) In the event of death by accident the maximum Accident Death Benefit specified in Paragraph 1 of this Section, or in the event of death by sickness, the maximum Sickness Death Benefit specified in Paragraph 2 of this Section, shall be paid, subject to the provisions of subparagraph (c) of this Paragraph 4, to the wife of the deceased employee if living with him at the time of his death; to the husband of the deceased employee, if physically or mentally incapable of self-support and actually supported in whole or in part by the deceased employee at the time of her death; or to the child or children of the deceased employee under the age of eighteen years (or over that age if physically or mentally incapable of self-support) who were actually supported in whole or in part by the deceased employee at the time of death. If the employee leaves both wife (or husband) and a child or children, as here described, the Committee, in its discretion, may pay the Death Benefit to or for any one or more of such possible beneficiaries in such portions as it may determine.

(b) If there be no beneficiary of the deceased employee as described above in sub-paragraph (a), then, in the event of death by accident, an Accident Death Benefit in an amount not to exceed the amount specified in Paragraph 1 of [redacted] or in the event of death by sickness, a Sickness [redacted] efit in an amount not to exceed the amount spec[redacted]graph 2 of this Section, may be paid to any [redacted] or persons who may be beneficiaries, as defined [redacted] sentence of this paragraph 4, and be receiving or [redacted]ed to receive support from the deceased employee at the time of his death.

Subject to the limitations expressed in this sub-paragraph (b) the Committee shall have full authority to determine to whom payments shall be made and the amount of the payments, taking into consideration the degree of dependency and such other facts as it may deem pertinent.

(c) If the employee shall have made written request and shown good cause therefor, the Committee may pay all or [fol. 3339] a portion of the Death Benefit to a person or persons included in sub-paragraph (b) above, and reduce, by the amount thus paid, the amount which is payable to the persons included in sub-paragraph (a), provided in the opinion of the Committee good cause for such action still exists at the time of the employee's death.

(d) Upon the death of an employee or pensioner, if there be no beneficiary qualified to receive an award under the provisions of this Section, or if the amount of such award authorized by the Committee be less than the maximum specified in Paragraph 1, 2 or 3 of this Section, as the case may be, the Committee may authorize such payments as may be required to defray the necessary expenses incident to the death of the employee or pensioner and the disability immediately preceding, together with, in the case of death by sickness, the necessary expenses, not exceeding Two Hundred and Fifty Dollars ($250), of his burial; provided, however, that the aggregate amount so paid shall not exceed the maximum benefits specified in said paragraphs.

(5) Unless otherwise specified by the Committee the Death Benefit at the death of an employee or the amount awarded at the death of a pensioner shall be paid in monthly sums equal to the monthly wages or monthly pension paid at the time of his death. In the discretion of the Commit-

tee, however, such sums and times of payments may be varied.

In the event of the death of a beneficiary who is receiving or is entitled to receive installment payments under this Section, such payments shall cease. In the discretion of the Committee, however, and within the amounts which the deceased beneficiary would have received if he had survived, the Committee may authorize payments in connection with the disability, death and burial of the deceased beneficiary under conditions similar to those described in sub-paragraph (d) of Paragraph 4 of this Section, or may authorize payments to some other person eligible as a beneficiary of the deceased employee or pensioner under the provisions of Paragraph 4.

Upon the death of an employee or pensioner, the Committee, without awaiting determination of the beneficiary or beneficiaries, if any, to whom the award will be made, may pay an amount equivalent to the wages, disability benefits or pension which the deceased was receiving, to the end of the payroll period in which the death occurs, and such payment may be made to the wife of the deceased, or to some other suitable person selected by the Committee. Such [fol. 3340] payment, if made, shall constitute a part of the award. In addition the Committee, in its discretion, may authorize payment, before the final settlement, of a part of the award not exceeding Two Hundred and Fifty Dollars ($250), to meet urgent expenses incident to the death and the immediately preceding disability of the deceased. If any of the persons to whom an award may be payable cannot be found or cannot be conveniently communicated with or are incompetent to authorize use of any part thereof for the burial of the deceased and the payment of necessary expenses incident to his death and preceding disability, the Committee in its discretion may make such payments, as a part of the award, as in its judgment may be reasonable for the proper burial of the deceased and the payment of necessary expenses incident to his death and disability immediately preceding.

(6) A Death Benefit shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable

to engage in any gainful occupation. In such cases a Death Benefit may be paid, in the discretion of the Committee, provided it has been furnished from time to time with such proof of continued disability as it may have required and provided it has been permitted to make, or have made by a physician, such examinations of the disabled person as it has deemed necessary in order to ascertain his condition. The amount of the Death Benefit, if any, shall not exceed the amount which could have been paid if the disabled person had died on the day he ceased to be an employee of the Company.

(7) All claims for Death Benefits, to be valid, must be made in writing within one year of the death on which the claim is based. In case notice in writing of the existence of a wife (or husband), child or other dependent relative of a deceased employee shall not be served on the Committee within one year after such employee's death, it shall be conclusive, in so far as these Regulations are concerned, that there are no such persons in existence.

(8) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death by sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

[fol. 3341] (9) All amounts payable under this Section shall be a charge to the operating expense accounts of the Company when and as paid.

Section 4, Paragraph 4, of the Plan is amended to read as follows:

Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Further payments, if any, which may be made to the wife or dependent relatives of a deceased pensioner are as provided and limited by Section 7 of these Regulations.

Section 8, Paragraph 19, of the Plan is amended to read as follows:

Disability benefits or pensions accrued but unpaid at the death of an employee or pensioner may, in the discretion of the Committee, be paid to the wife of the deceased person or to some other suitable person selected by the Committee, for use in payment of expenses incident to the death of the deceased person or the disability immediately preceding, or for the benefit of any one or more persons who were dependent upon him at the time of his death.

Do not consider death benefits as a substitute for individual life insurance.

[fol. 3342] EXHIBIT A-211

Illinois Bell Telephone Company

Revenue, Expense and Net Income Statement
(with Taxes adjusted to latest view for 1932)

Three Months Ended March 31, 1932

Exchange Revenues	$16,391,279
Toll Revenues	4,629,074
Miscellaneous Operating Revenues	310,790
Telephone Operating Revenues	$21,331,143
Less: Licensee Revenue—Dr.	312,395
Total Telephone Operating Revenues	$21,018,748
Traffic Expenses	$4,428,454
Commercial Expenses	2,230,098
General and Miscellaneous Expenses	996,095
Current Maintenance	3,665,772
Depreciation	3,461,484
Taxes Assignable to Operations	2,680,484
Other Operation Expenses	501,385
Total Telephone Operating Expenses	$17,963,772
Net Earnings from Telephone Operations	$3,054,976
Interest Deductions	802,880
Balance Net Profits from Telephone Operations after Interest Deductions	$2,252,096
Dividends	3,000,000
Deficit from Telephone Operations after Interest and Dividends	$747,904
Net Non-Operating Revenues (from other than telephone operations)	727,201
Net Deficit after including Net Non-Operating Revenues	$20,703

[fol. 3343] EXHIBIT A-212

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1913

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.200	802.00
2. 1016 Switchboard Cable	Ft	4,774	.168	802.03
3. 114-M Relay	Ea	535	1.350	722.25
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.800	165.60
8. 110 Plug	"	298	.500	223.50
Total Material				3,441.43
Labor and Incidental Cost Percent—41.50				1,428.19
Total Cost in Place				4,869.62

[fol. 3344] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1914

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114-M Relay	Ea	535	1.100	588.50
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material				2,867.77
Labor and Incidental Cost Percent—41.50				1,190.12
Total Cost in Place				4,057.89

[fol. 3345] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1915

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114-M Relay	Ea	535	1.100	588.50
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05

Item	Unit	Quantity	Unit Cost	Material Cost
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material	....	.....	.....	2,867.77
Labor and Incidental Cost Percent—45.15	....	.....	.....	1,294.80
Total Cost in Place	....	.....	.....	4,162.57

[fol. 3346] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1916

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114-M Relay	Ea	535	1.100	588.50
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material	....	.....	.....	2,867.77
Labor and Incidental Cost Percent—51.34	....	.....	.....	1,472.31
Total Cost in Place	....	.....	.....	4,340.08

[fol. 3347] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1917

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,028	.240	769.92
2. 1016 Switchboard Cable	Ft	4,774	.253	1,207.82
3. 114-M Relay	Ea	535	1.500	802.50
4. 25-A Repeating Coil	"	68	5.310	361.08
5. 1168-A Protector	"	690	.563	388.47
6. #1-7 Panel 3 Position Section	"	1	167.500	167.50
7. 38 Terminal Strip	"	207	.870	180.09
8. 110 Plug	"	298	.620	184.76
Total Material	....	.....	.....	4,062.14
Labor and Incidental Cost Percent—48.08	....	.....	.....	1,953.08
Total Cost in Place	....	.....	.....	6,015.22

[fol. 3348] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1918

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.250	802.00
2. 1016 Switchboard Cable	Ft	4,774	.275	1,312.85
3. 114–M Relay	Ea	535	1.500	802.50
4. 25–A Repeating Coil	"	68	6.000	408.00
5. 1168–A Protector	"	690	.595	410.55
6. #1–7 Panel 3 Position Section	"	1	180.000	180.00
7. 38 Terminal Strip	"	207	.950	196.65
8. 110 Plug	"	298	.700	208.60
Total Material	....	....	.....	4,321.15
Labor and Incidental Cost Percent—53.81	....	.....	.....	2,325.21
Total Cost in Place	....	.....	.....	6,646.36

[fol. 3349] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1919

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.260	834.08
2. 1016 Switchboard Cable	Ft	4,774	.275	1,312.85
3. 114–M Relay	Ea	535	.570	839.95
4. 25–A Repeating Coil	"	68	6.600	448.80
5. 1168–A Protector	"	690	.595	410.55
6. #1–7 Panel 3 Position Section	"	1	195.000	195.00
7. 38 Terminal Strip	"	207	1.050	217.35
8. 110 Plug	"	298	.710	211.58
Total Material	....	.....	.....	4,470.16
Labor and Incidental Cost Percent—60.22	....	.....	.....	2,691.93
Total Cost in Place	....	.....	.....	7,162.09

[fol. 3350] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1920

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.310	994.48
2. 1016 Switchboard Cable	Ft	4,774	.367	1,752.06
3. 114–M Relay	Ea	535	1.820	973.70
4. 25–A Repeating Coil	"	68	7.380	501.84
5. 1168–A Protector	"	690	.690	476.10

Item	Unit	Quantity	Unit Cost	Material Cost
6. #1-7 Panel 3 Position Section	"	1	330.000	330.00
7. 38 Terminal Strip	"	207	1.300	269.10
8. 110 Plug	"	298	.820	244.36
Total Material				5,541.64
Labor and Incidental Cost Percent—53.80				2,981.40
Total Cost in Place				8,523.04

[fol. 3351] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1921

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.320	1,026.56
2. 1016 Switchboard Cable	Ft	4,774	.400	1,909.60
3. 114-M Relay	Ea	535	2.000	1,070.00
4. 25-A Repeating Coil	"	68	7.550	513.40
5. 1168-A Protector	"	690	.743	512.67
6. #1-7 Panel 3 Position Section	"	1	420.000	420.00
7. 38 Terminal Strip	"	207	1.450	300.15
8. 110 Plug	"	298	.900	268.20
Total Material				6,020.58
Labor and Incidental Cost Percent—52.49				3,160.20
Total Cost in Place				9,180.78

[fol. 3352] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1922

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.290	930.32
2. 1016 Switchboard Cable	Ft	4,774	.370	1,766.38
3. 114-M Relay	Ea	535	2.000	1,070.00
4. 25-A Repeating Coil	"	68	7.310	497.08
5. 1168-A Protector	"	690	.736	507.84
6. #1-7 Panel 3 Position Section	"	1	420.000	420.00
7. 38 Terminal Strip	"	207	1.400	289.80
8. 110 Plug	"	298	.880	262.24
Total Material				5,743.66
Labor and Incidental Cost Percent—52.49				3,014.85
Total Cost in Place				8,758.51

[fol. 3353] Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year Nov. 1922

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.270	866.16
2. 1016 Switchboard Cable	Ft	4,774	.340	1,623.16
4. 114-M Relay	Ea	535	2.000	1,070.00
5. 25-A Repeating Coil	"	68	6.780	461.04
5. 1168-A Protector	"	690	.720	496.80
6. #1-7 Panel 3 Position Section	"	1	420.000	420.00
7. 38 Terminal Strip	"	207	1.250	258.75
8. 110 Plug	"	298	.850	253.30
Total Material	....	.....	.....	5,449.21
Labor and Incidental Cost Percent—52.49	....	.....	.....	2,860.29
Total Cost in Place	....	.....	.....	8,309.05

(Here follows Exhibit A-213, side folio 3354)

EXHIBIT A-213

(NAME OF COMPANY)

TIMATE LEDGER
UTSIDE PLANT

DATE OF ESTIMATE	PREPARED BY	DATE APPROVED	COMMENCED	COMPLETED	PREL. COMP. NOTICE	FINAL PRINTS	FINAL REPORT SUB.	FINAL REPORT ACCEPT.	CLASS OF WORK	LOCATION	DIVISION	STATE
									Exchange Pole Lines	La Fayette	Ohio	Ill.

APPROPRIATION							29925			1925					247850								279700								
MONTH	MATERIAL			SUPPLY EX.			LABOR			OVERHEAD EXPENSE			STABLE & GARAGE		SUNDRY DISBURSEMENTS					TOTAL			CUMULATIVE TOTAL			TRANSFERRED TO PLANT			BALANCE ACCT. 104			INT MONTH
															279350					279350			279350			279350			-0-			
TOTAL															279350								279350								
DIFF.																																

DETAIL OF MATERIAL ADDED (CONSTRUCTION) ~~OR DETAIL OF UNITS DISPLACED (RETIREMENTS)~~

KIND OF MATERIAL	35' B Pole		35' a a Pole		40' a Pole		8" Anchor																	
ESTIMATED	114	199500	4	10000	15	37500	1	850																
ACTUAL	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST
MONTH: Jan 23	57	225150	2	10900	7½	40875	½	425																
TOTAL	57	225150	2	10900	7½	40875	½	425																

DETAIL OF L

KIND OF MATERIAL										EXEMPT MATERIAL			MISCELLANEOUS MATERIAL			CLASS:			CLASS:		
ESTIMATED																					

EXHIBIT A-213

(NAME OF COMPANY)

3354 (1)

DELIVERED	PREL. COMP. NOTICE	FINAL PRINTS	FINAL REPORT SUB.	FINAL REPORT ACCEPT.	CLASS OF WORK	LOCATION	DIVISION	STATE
					Exchange Pole Lines	La Fayette	Chgo	Ill

ESTIMATE NO. 22150 FORM S.R. 500

FIELD CODE 1C ACCT. NO. 241

LABOR	OVERHEAD EXPENSE	STABLE & GARAGE	SUNDRY DISBURSEMENTS		TOTAL	CUMULATIVE TOTAL	TRANSFERRED TO PLANT	BALANCE ACCT. 104	INT. DUR. CONST. MONTHLY CHG.	INT. DUR. CONST. CUM. TOTAL	RETIREMENTS PLANT DISPLACED	RETIREMENTS SALVAGE
29925	1925		247850			279700						
			279350		279350	279350	279350	-0-				
			279350			279350						

DETAIL OF MATERIAL ADDED (CONSTRUCTION) ~~OR DETAIL OF UNITS DISPLACED (RETIREMENTS)~~

A Pole		40' A Pole		8" Anchor																	
100 00		15	375 00	1	8 50																
COST		QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST
109 00		7½	408 75	½	4 25																
109 00		7½	408 75	½	4 25																

DETAIL OF LABOR

EXEMPT MATERIAL	MISCELLANEOUS MATERIAL	CLASS:	CLASS:	CLASS:	CLASS:	CLASS:

ESTIMATED													MATERIAL			MATERIAL				
ACTUAL	QTY.	COST		QTY.	COST		QTY.	COST		QTY.	COST		QTY.	COST		COST			HRS.	COST		HRS.	COST
MONTH: Jan 23																20	00						
TOTAL																20	00						

COST	QTY.	COST	QTY.	COST	QTY.	COST	MATERIAL COST	MATERIAL COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST
								20 00										
								2000										

[fol. 3355]

EXHIBIT A-214

Comparative Table Showing Effect of Weighting Increase Factors

Method No.	1	2		3		4			
Basis of Mat'l Weighting	Appraisal Method Based on a fixed proportion of mat'ls. typical of the plant as a whole	Based on mat'l. of 10 specific estimates each year using only those items appearing in appraisal set-up		Based on all the mat'l. installed under 10 specific estimates each year		Based on all the mat'l. installed on both specific and routine estimates			
Basis of Labor Weighting	Based on a fixed gang make-up typical of company's practice	Same as under Method No. 1		Based on gang make-up peculiar to each year		Same as under Method No. 3			
Years	1914-1923	1914-1923		1914-1923		1920-1923			
	Total gross add. June 30, 1923 level	Total gross add. June 30, 1923 level	% of Appraisal Method	Total gross add. June 30, 1923 level	% of Appraisal Method	Total gross add. June 30, 1923 level		% of Appraisal Method	Max. Yearly Variation
						Appr. Meth.	Meth. #4		
Account 241	$1,427,274	$1,435,877	100.60	$1,441,259	100.98	$537,017	$535,444	99.71	.79
" 242	2,520,150	2,513,874	99.75	2,500,788	99.23	742,458	743,504	100.14	1.67
" 245	12,622,514	12,505,818	99.08	12,678,651	100.44	4,236,491	4,217,112	99.54	.91
Total	$16,569,938	$16,455,569	99.31	$16,620,698	100.31	$5,515,966	$5,496,060	99.64	

[fol. 3356]

EXHIBIT A-215

Illinois Bell Telephone Company, Chicago Exchange

Percent Increase in Material Costs June 30, 1923 over Previous Periods, Account 241—Exchange Pole Lines

Item	Year 1921			Year 1922			Jan.-June 1923		
	Quantity	Actual Cost	Cost at Level of June 30, 1923	Quantity	Actual Cost	Cost at Level of June 30, 1923	Quantity	Actual Cost	Cost at Level of June 30, 1923
Pole—25-A	1	9.88	14.02	8	121.70	84.12	1	9.46	14.02
25-B	5	47.70	42.10	3	86.56	25.26	1	7.74	8.42
25-C	1	5.28	6.20	7	40.18	43.40	9	51.66	55.80
30-AA	1	19.60	22.41	2	39.39	44.82	1	20.59	22.41
30-A	17	298.84	333.88	29	524.09	569.56	13	210.65	255.32
30-B	112	1,487.68	1,570.24	167	2,258.31	2,341.34	121	1,496.08	1,696.42
30-C	3	28.62	25.26	3	38.43	25.26	1	7.69	8.42
35-AA	11	281.41	289.63	49	1,176.15	1,290.17	39	944.12	1,026.87
35-A	41	830.43	918.81	112	2,223.87	2,509.92	52	1,058.53	1,165.32
35-B	326	6,189.70	6,177.70	830	15,227.24	15,728.50	515	10,430.81	9,759.25
35-C	.....	.....	.....	.....	.....	.....	1	13.76	14.02
40-AA	7	232.61	211.75	13	395.87	393.25	22	586.84	665.50
40-A	33	882.02	868.89	94	2,217.79	2,475.02	54½	1,517.08	1,434.99
40-B	52	1,117.93	1,165.32	92	1,860.98	2,061.72	60	1,261.49	1,344.60
45-AA	4	162.44	148.08	8	252.36	296.16	10	323.23	370.20
45-A	26	799.37	786.50	24	633.94	726.00	17	450.02	514.25
45-B	5	172.15	139.65	25	620.25	698.25	12	278.72	335.16
50-A	.....	.....	.....	5	162.50	185.10	(4)	(130.60)	(148.08)
50-B	1	33.23	30.25	1	30.73	30.25	2	52.84	60.50
55-A	.....	.....	.....	.....	.....	.....	3	112.91	130.47
55-B	.....	.....	.....	2	65.00	74.04	2	54.54	74.04
60-A	.....	.....	.....	1	55.36	50.57			
60-B	.....	.....	.....	4	171.34	173.96	1	40.29	43.49
65-A	.....	.....	.....	1	55.13	62.60	(1)	(55.13)	(62.60)
Sub-Total		$12,598.89	$12,750.69		$28,257.17	$29,889.27		$18,743.32	$18,788.79

Pole Yard Charges*		2,859.95	2,052.86		4,153.80	4,812.17		3,186.36	3,025.00
Guard Arms	1,525	1,034.34	1,055.30	6,299	4,168.17	4,358.91	3,222	1,947.04	2,229.62
Crossarms— 6 Pin	6	10.80	3.28						
" 10 "	48	55.94	48.96	33	50.91	33.66	15	18.73	15.30
Bierce Anchor— 8"	292	194.34	186.18	951	645.11	640.59	412½	267.84	277.86
" " 12"				10	13.42	13.60	9	12.31	12.24
Everstick "				2	.89	.86			
Guy Rods—5/8" x 8'	273	266.46	171.88	897	562.55	564.75	297	168.08	186.99
" " 3/4" x 9'	30	42.70	30.60	75	70.27	76.50	114	110.48	116.28
" " 1" x 10'				51	170.98	99.96			
" " 1/2" x 10'				13	21.40	7.50	11	19.58	6.34
Strand—6M	27,000	442.80	374.22	33,480	451.98	464.03	21,830	296.89	302.56
Sub-Total		$17,506.22	$16,673.97		$38,566.65	$40,961.80		$24,770.63	$24,960.98
Supply Expense *		1,838.15	1,333.92		3,586.70	3,399.83		1,981.65	1,996.88
Total Material Cost		$19,344.37	$18,007.89		$42,153.35	$44,361.63		$26,752.28	$26,957.86
Percent Increase June 30, 1923 over previous periods			(6.91)			5.24			.77

* Computed at same percentage as in Plaintiff's Exhibit No. 1.
( )—decrease.

[fol. 3357]

EXHIBIT A-216

Western Electric Company

Pension Fund Transactions

Year	Balance Beginning of Year	Credits for Pension Accruals Interest and Appropriations	Charges for Pensions Paid	Balance at End of Year
1906	$ 0	$ 561,090	$ 2,412	$ 558,678
1907	558,678	22,162	4,180	576,660
1908	576,660	21,958	7,341	591,277
1909	591,277	23,343	17,126	597,494
1910	597,494	175,249	33,202	739,541
1911	739,541	79,006	31,658	786,889
1912	786,889	246,723	33,612	1,000,000
1913	1,000,000	34,887	34,887	1,000,000
1914	1,000,000	37,620	37,620	1,000,000
1915	1,000,000	44,258	44,258	1,000,000
1916	1,000,000	40,326	40,326	1,000,000
1917	1,000,000	535,785	35,785	1,500,000
1918	1,500,000	135,063	35,063	1,600,000
1919	1,600,000	45,128	45,128	1,600,000
1920	1,600,000	51,302	51,302	1,600,000
1921	1,600,000	62,807	62,807	1,600,000
1922	1,600,000	467,217	67,217	2,000,000
1923	2,000,000	72,260	72,260	2,000,000
1924	2,000,000	2,074,670	74,670	4,000,000
1925	4,000,000	3,576,605	76,605	7,500,000
1926	7,500,000	5,069,139	69,139	12,500,000
1927	12,500,000	4,984,500	86,349	17,398,151
1928	17,398,151	2,924,719	101,148	20,221,722
1929	20,221,722	5,193,790	119,563	25,295,949
1930	25,295,949	5,499,359	147,207	30,648,101

(Here follows Exhibit A-217, side folio 3358)

EXHIBIT A-217

WESTERN ELECTRIC COMPANY, INC.

NET PROFITS PER EXHIBITS A 77 AND A 79
ADJUSTED TO ACTUARIAL BASIS FOR PENSION FUND ACCRUALS
BELL AND NON-BELL BUSINESS
(DOLLARS IN THOUSANDS)

Year	Net profits per Exhibits A 77 and A 79	Provision for Pension Fund by Western Electric Company, Inc. — Total additions to fund	Deduct additions charged against non-operating income	Additions charged against operating income	Pension accruals per actuarial computations
1916	$ 3,870	40	-	40	431
1917	5,800	536	500	36	626
1918	6,034	135	100	35	692
1919	5,376	45	-	45	705
1920	7,290	51	-	51	1,095
1921	8,474	63	-	63	1,414
1922	8,034	467	400	67	1,595
1923	9,115	72	-	72	2,072
1924	13,245	2,075	-	2,075	2,284
1925	15,580	4,977	-	4,977	1,804
1926	14,247	5,069	-	5,069	1,969
1927	18,165	4,985	-	4,985	2,114
1928	19,876	2,925	-464(a)	2,461	2,212
1929	23,761	5,194	1,168(a)	4,026	3,948
1930	12,934	5,499	1,467(a)	4,032	4,032

EXHIBIT A-217

WESTERN ELECTRIC COMPANY, INC.

NET PROFITS PER EXHIBITS A 77 AND A 79
ADJUSTED TO ACTUARIAL BASIS FOR PENSION FUND ACCRUALS
BELL AND NON-BELL BUSINESS
(DOLLARS IN THOUSANDS)

Provision for Pension Fund by Western Electric Company, Inc.					
Total additions to fund	Deduct additions charged against non-operating income	Additions charged against operating income	Pension accruals per actuarial computations	Adjustment to profits	Net profits as adjusted for pension accruals
40	-	40	431	391*	3,479
536	500	36	626	590*	5,210
135	100	35	692	657*	5,377
45	-	45	705	660*	4,716
51	-	51	1,095	1,044*	6,246
63	-	63	1,414	1,351*	7,123
467	400	67	1,595	1,528*	6,506
72	-	72	2,072	2,000*	7,115
2,075	-	2,075	2,284	209*	13,036
4,977**	-	4,977	1,804	3,173	18,753
5,069	-	5,069	1,969	3,100	17,347
4,985	-	4,985	2,114	2,871	21,036
2,925	-464(a)	2,461	2,212	249	20,125
5,194	1,168(a)	4,026	3,948	78	23,839
5,499	1,467(a)	4,032	4,032	-	12,934

1929	23,761	5,194	1,168(a)	4,026	3,948
1930	12,934	5,499	1,467(a)	4,032	4,032
	171 801	32 133	44099	28.034	26 993

* Red figures

** Inclues $1,400,000.00 Pension Fund under agreement with Graybar Electric Co. Inc.

(a) Interest on fund charged to interest deductions

1923-30	126,923	30,796	3099	27.697	20,435

1923 and 1929 Pension Adj in connection

5,194	1,168(a)	4,026	3,948	78 X	23,839
5,499	1,467(a)	4,032	4,032	-	12,934
32 133	17099	28.034	26 993	1841	17.2 842

,000.00 Pension Fund under agreement with Graybar Electric Co. Inc.
nd charged to interest deductions

30,796	3099	27.697	20,435	7262	134,185

[fol. 3359]

EXHIBIT A-219

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate
Year Ended December 31, 1923

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$60,045,511	4,803,408	39,521,355	3,161,555	37,758,703	3,020,550	36,102,758	2,688,080
Capital stock installments	2,485,375	198,830	1,635,849	130,868	1,562,890	125,031	1,494,348	119,548
Funded debt (less unamortized debt discount and expense)	41,268,751	2,205,249	27,162,679	1,451,473	25,951,224	1,388,737	24,813,107	1,325,921
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	411,394	24,190	270,775	15,921	258,698	15,211	247,353	14,544
Western Electric Co. (Class "C" Material stock)	2,983	179	1,963	118	1,875	113	1,793	108
Subscribers' deposits	2,350	141	1,547	99	1,478	89	1,413	85
Total Funds, Interest and Dividends	$104,216,364	$7,231,997	$68,594,168	$4,760,028	$65,534,868	$4,547,731	$62,660,772	$4,348,286

EXHIBIT 219—Continued

[fol. 3360]

EXHIBIT A-219

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate
Year Ended December 31, 1924

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$67,584,814	$5,401,752	$44,788,532	$3,582,928	$42,683,471	$3,414,530	$40,740,096	$3,259,067
Capital stock installments	1,982,612	158,609	1,315,047	105,204	1,253,240	100,259	1,196,180	95,695
Funded debt (less unamortized debt discount and expense)	45,790,073	2,614,126	30,372,098	1,733,924	28,944,609	1,652,430	27,626,764	1,577,194
Miscellaneous interest bearing obligations:								
Western Electric Company (Class "C" material stock)	12,917	775	8,567	514	8,164	490	7,795	468
Subscribers' deposits	4,950	297	3,283	197	3,129	188	2,986	179
Special assessments	383	23	254	15	242	14	231	14
Commercial Telephone & Telegraph Company	11,616	697	7,705	462	7,343	440	7,009	420
Miscellaneous	17	1	11	1	11	1	10	1
Total. Funds, Interest, and Dividends	$115,327,379	$8,176,280	$76,495,497	$5,423,245	$72,900,209	$5,168,352	$69,561,069	$4,933,038

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1925

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$70,002,933	$5,600,000	$46,572,951	$3,725,680	$44,127,871	$3,530,082	$42,015,788	$3,361,122
Capital stock installments	2,735,700	218,856	1,820,061	145,605	1,724,508	137,961	1,641,968	131,357
Funded debt (less unamortized debt discount and expense)	45,585,369	2,597,570	30,327,946	1,728,163	28,735,729	1,637,434	27,360,357	1,559,063
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	1,983,044	116,603	1,319,319	77,576	1,250,055	73,503	1,190,224	69,985
Western Electric Co. (Class "C" material stock)	3,083	185	2,051	123	1,943	116	1,850	111
Subscribers' deposits	10,983	659	7,307	438	6,924	415	6,592	395
Special assessments	8,183	491	5,444	327	5,158	310	4,911	295
City of Chicago, interest on revenue due city during Federal Control	89,520	4,476	59,558	2,978	56,431	2,822	53,730	2,687
Total Funds, Interest, and Dividends	$120,418,815	$8,538,840	$80,114,637	$5,680,890	$75,908,619	$5,382,643	$72,275,420	$5,125,015

EXHIBIT 219—Continued

[fol. 3362]

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1926

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$80,003,433	$6,400,000	$53,207,083	$4,256,385	$50,168,959	$4,013,345	$47,638,962	$3,810,954
Capital stock installments								
Funded debt (less unamortized debt discount and expense)	45,470,617	2,532,754	30,240,689	1,717,686	28,513,947	1,619,606	27,078,001	1,537,930
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	7,511,837	441,696	4,995,822	293,755	4,710,560	276,982	4,473,009	263,014
Western Electric Company (Class "C" material stock)	386,217	23,173	256,857	15,411	242,190	14,531	229,977	13,798
Subscribers' deposits	17,667	1,060	11,750	705	11,079	665	10,520	631
Special assessments	8,833	530	5,875	352	5,539	332	5,260	315
Miscellaneous	300	18	200	12	189	11	178	11
Total Funds, Interest, and Dividends	$133,398,904	$9,449,231	$88,718,276	$6,284,306	$83,652,462	$5,925,472	$79,433,907	$5,626,653

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1927

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$87,503,647	$7,000,000	$57,761,157	$4,620,700	$54,260,831	$4,340,685	$51,289,019	$4,102,951
Capital stock installments	12,540,350	1,003,228	8,277,885	662,231	7,776,245	622,100	7,350,348	588,028
Funded debt (less unamortized debt discount and expense)	45,557,812	2,581,808	30,072,712	1,704,252	28,250,306	1,600,974	26,703,065	1,513,290
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	811,803	47,734	535,871	31,509	503,397	29,599	475,826	27,978
Western Electric Co. (Class "C" material stock)	478,067	28,684	315,572	18,934	296,448	17,787	280,212	16,812
Various Banks, demand notes, Bankers Trust Company	2,055	113	1,357	74	1,275	70	1,205	67
Subscribers' deposits	146,383	8,783	96,627	5,798	90,771	5,447	85,800	5,148
Special assessments	8,833	530	5,831	350	5,478	329	5,178	311
Miscellaneous	1,067	64	704	42	661	39	625	37
Total Funds, Interest, and Dividends	$147,050,017	$10,670,944	$97,067,716	$7,043,890	$91,185,412	$6,617,030	$86,191,278	$6,254,622

[fol. 3364]

EXHIBIT 219—Continued

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1928

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$110,004,168	$8,800,000	$72,718,255	$5,817,240	$67,758,870	$5,420,504	$63,677,922	$5,094,041
Capital stock installments	.....	.....	.....	.....	.....	.....	.....	.....
Funded debt (less unamortized debt discount and expense)	45,788,958	2,588,288	30,268,791	1,710,987	28,204,460	1,594,298	26,505,775	1,498,277
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	5,321,803	312,922	3,517,978	206,857	3,278,052	192,749	3,080,623	181,141
Western Electric Company (Class "C" material stock)	585,300	35,118	386,913	23,215	360,526	21,632	338,812	20,329
Various banks, demand notes, Bankers Trust Company	1,825,491	100,402	1,206,741	66,371	1,124,441	61,845	1,056,719	58,120
Subscribers' deposits	190,617	11,437	126,007	7,561	117,413	7,045	110,342	6,620
Special assessments	8,833	530	5,839	350	5,441	326	5,113	306
Advances from Bell Realty Trust	40,238	2,366	26,599	1,564	24,785	1,457	23,292	1,370
Miscellaneous	1,633	98	1,080	65	1,006	61	945	57
Total Funds, Interest, and Dividends	$163,767,041	$11,851,161	$108,258,203	$7,834,210	$100,874,994	$7,299,917	$94,799,543	$6,860,261

[fol. 3365]

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1929

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$110,004,168	$8,800,000	$72,026,329	$5,761,888	$66,408,275	$5,312,461	$61,921,035	$4,953,495
Capital stock installments	10,000,513	800,041	6,547,936	523,835	6,037,197	482,976	5,629,261	450,341
Funded debt (less unamortized debt discount and expense)	45,705,016	2,575,613	29,925,817	1,686,409	27,591,603	1,554,869	25,727,225	1,449,806
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	7,747,364	455,545	5,072,664	298,273	4,676,996	275,008	4,360,969	256,425
Western Electric Co. (Class "C" Material Stock)	1,082,033	64,922	708,472	42,508	653,211	39,192	609,073	36,544
Various banks, demand notes, Bankers Trust Co	5,529,764	304,137	3,620,668	109,137	3,338,256	183,604	3,112,685	171,198
Subscribers' deposits	276,167	16,570	180,823	10,849	166,719	10,003	155,454	9,327
Special assessments	8,833	530	5,783	347	5,332	320	4,972	298
Central Union Telephone Company advances	6,100	122	3,994	80	3,683	74	3,434	69
Advances from Bell Realty Trust	186,327	10,956	121,999	7,173	112,483	6,613	104,882	6,166
City of Chicago	316,667	19,000	207,341	12,440	191,168	11,469	178,251	10,695
Internal Revenue Department (additional income tax)	820,450	49,227	537,198	32,232	405,297	29,718	461,829	27,710
Miscellaneous	7,583	455	4,965	298	4,578	275	4,268	256
Total Funds, Interest, and Dividends	$181,690,985	$13,097,118	$118,963,989	$8,575,469	$109,684,798	$7,906,582	$102,273,341	$7,372,330

[fol. 3366]

EXHIBIT 219—Continued

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1930

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$130,004,168	$10,400,000	$84,059,395	$6,724,536	$76,855,505	$6,148,243	$71,215,119	$5,697,027
Capital stock installments	14,998,912	1,199,913	9,698,146	775,852	8,867,015	709,362	8,216,270	657,302
Funded debt (less unamortized debt discount and expense)	45,771,193	2,572,476	29,595,196	1,663,337	27,058,888	1,520,789	25,073,050	1,409,179
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	12,228	719	7,906	465	7,228	425	6,698	394
Western Electric Co. (Class "C" material stock)	1,230,750	73,845	795,791	47,747	727,592	43,655	674,194	40,451
Various banks, demand notes, Bankers Trust Company	6,850,345	376,769	4,429,365	243,615	4,049,768	222,737	3,752,558	206,391
Subscribers' deposits	294,860	17,668	190,615	11,437	174,279	10,457	161,489	9,689
Special assessments	8,833	530	5,711	343	5,222	314	4,838	291
Central Union Telephone Company advances	23,150	463	14,969	299	13,686	273	12,682	253
Advances from Bell Realty Trust	360,561	20,613	226,669	13,328	207,243	12,186	192,034	11,292
City of Chicago	2,389,800	143,388	1,545,821	92,713	1,412,796	84,768	1,309,111	78,546
Internal Revenue Department (additional income tax)	*200,733	*12,044	*129,792	*7,787	*118,669	*7,120	*109,960	*6,597
Miscellaneous	650	39	420	25	384	23	356	21
Total Funds, Interest, and Dividends	$201,734,657	$14,794,399	$130,439,612	$9,565,910	$119,260,937	$8,746,112	$110,508,439	$8,104,239

* Red figures.

[fol. 3367] EXHIBIT A-220

Official letter of transmittal stamped and returned as receipt Sept. 9, 1925.

Advice No. 108

September 5, 1925.

Illinois Commerce Commission, Section Rates and Tariffs, Springfield, Illinois.

GENTLEMEN: Desiring to give you a more complete Toll Rate Schedule, we have prepared and are forwarding you herewith Ill. C. C. No. 2, Sheets 1 to 32 inclusive, Schedule of Toll Rates, which cancels and replaces I. P. U. C. No. 1, Schedule of Toll Rates. Schedule Ill. C. C. No. 2 makes no change in our toll rate schedule or practices. The Master Rate Machine with Set of Rate Charts referred to in the new schedule is the same machine as you now have for use in connection with the I. P. U. C. No. 1 schedule and we have, therefore, not furnished you another machine.

As stated above, this new schedule makes no change in our toll rate schedule or practices and we would respectfully request your Honorable Commission to accept it, to be effective as of September 10, 1925.

Kindly acknowledge receipt by returning the extra copy of this letter attached hereto for that purpose.

Yours truly,

——— ———, General Commercial Superintendent.

[fol. 3368] EXHIBIT A-221

Ill. C. C. No. 2. Original Sheet No. 2, Cancelling I. P. U. C. No. 1

Illinois Bell Telephone Company

Schedule of Toll Rates

Instructions

The Toll Tariffs consist of the following:

1. Instructions containing the classifications of service.

2. Table of Standard Rates and tables for converting the Initial Station-to-Station Day Rates, shown in the Tariffs, to the rates for other classes of service.

3: List of Special Toll Rates.

4. A United States Government Survey Map of the State of Illinois and a Mileage Scale thereto.

5. "List of Stations" containing all stations in the State of Illinois.

6. A Master Rate Machine with Set of Rate Charts; a mechanical apparatus by means of which rate information is condensed and rate quoting facilitated.

General

The service covered by these tariffs consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service.

Classification of Toll Service

The following classes of toll service are furnished:

Station-to-Station Service:

A Station-to-Station Call is one on which the person originating the call does not specify a particular person to be reached at the called station but gives only the number of the telephone station desired or the name or address under which the telephone is listed.

NOTE.—A call which would otherwise be a Station-to-Station Call is classed as a Person-to-Person Call, if request is made to reverse the charges.

Person-to-Person Service:

A Person-to-Person Call is one on which the person originating the call specifies a particular person (or an extension station) to be reached at the called place. Under certain conditions a partial charge (known as a "Report Charge") is made where it is impossible to establish communication on a Person-to-Person Call.

Collect Call Service:

A Collect Call is a Person-to-Person Call, the charges for which are to be reversed.

Appointment Call Service:

An Appointment Call is a Person-to-Person Call on which the person originating the call wishes arrangements made in advance with the called station to talk at a specified time.

Messenger Call Service:

A Messenger Call is a Person-to-Person Call involving paid messenger service or requiring the use of a telephone not connected with the Bell System to bring the called party to a Bell Telephone.

Report Charges:

A Report Charge shall be made on Person-to-Person, Collect, Messenger and Appointment Calls, which cannot be completed for the following reasons:

1. If the called party is not available at the called telephone and a report to this effect is given the calling telephone within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

2. If the called party refuses to talk.

3. If, when the call is ready for completion, the calling party refuses to talk or is not available at the calling telephone or no answer can be obtained from the calling telephone, provided this report is obtained within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

4. If, on a collect call, the called telephone or called party refuses to accept the charge for the message.

Issued September 5, 1925.
Effective September 10, 1925.
By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 3369] EXHIBIT A-227

Western Electric Company, Incorporated

General Accounting Department

Analysis of Profits on Business Other than with Bell Telephone Companies from 1881 to 1927 Inclusive

1. Interest and Dividends received on Foreign Business 1881 to 1925, Inclusive		$24,563,000(R)A
2. Profit on Sale of International Western Electric Company, Incorporated at September 30, 1925		6,586,000(S)
3. Net Profit on Sales to Foreign Customers for Export 1881 to 1927, Inclusive		4,367,000
4. Net Profits on Sales to Other Domestic Customers 1881 to 1925, Inclusive and to the Graybar Electric Company, Inc., during 1926 and 1927		18,885,000(S)
5. Royalties received on Vitaphone, Permalloy, Phonograph and Submarine Cable Business from 1914 to 1926, Inclusive	$2,127,000	
Less Specific Development and General Expenses Applicable to this Business	4,666,000	(2,539,000)
6. Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927		591,000
7. Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies		1,107,000
8. Revaluation to Increase the Stock of the Electrical Research Products, Inc., on Books of Western Electric Company, Incorporated, due to:		
(a) The Electrical Research Products Inc., writing up value of Stock of its Subsidiary Companies (Northern Electric Company and Graybar Electric Company, Inc.) from Cost to Book Value	$4,680,000	
(b) Undistributed Current Earnings of Electrical Research Products Inc., the year 1927	5,258,000(U)	9,938,000
Total		63,498,000(V)

R Includes special dividend received in 1925 amounting to $9,700,000.

S After providing for Pension Liability to employees of International Western Electric Company, Incorporated and Graybar Electric Company, Inc.

U Actual earnings for 1927, $5,504,000.

V Reclassified.

Manufacturing Profits	$10,468
Other	53,030
	63,498

(Here follows Exhibit A-228, side folio 3370.)

[fol. 3370]

EXHIBIT A-228

Analysis of Profits on Business Other Than With Bell Telephone Companies from 1881 to 1927, Inclusive

(Dollars in Thousands)

	a	b	c	d	e	f	g	h
	Interest and Dividends Received on Foreign Business 1881 to 1925	Profit on Sale of International Western Electric Company, Inc., at Sept. 30, 1925	Net Profit on Sales to Foreign Customers for Export 1881 to 1927 Inclusive	Net Profit on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to Graybar Electric Company, Inc. during 1926 and 1927	Royalties Received on Vitaphone, Permalloy Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	Specific Development and General Expense Applicable to Vitaphone, Permalloy, Phonograph and Submarine Cable Business	Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927	Income durin from Invest of Profit from Foreig Domestic Bu other than Bell Teleph Compani
July 1, 1881 to Nov. 30, 1890	$229	.....	$118	$370	.....	.....	.....	.....
1891 to 1895	612	.....	147	428	.....	.....	.....	.....
1896 to 1900	532	.....	363	(146)	.....	.....	.....	.....
1901 to 1905	1,566	.....	439	(1,401)	.....	.....	.....	.....
1906	724	.....	118	(196)	.....	.....	.....	.....
1907	548	.....	86	(73)	.....	.....	.....	.....
1908	767	.....	3	(816)	.....	.....	.....	.....
1909	537	.....	60	(215)	.....	.....	.....	.....
1910	724	.....	81	52	.....	.....	.....	.....
1911	(181)	.....	64	(80)	.....	.....	.....	.....
1912	53	.....	92	534	.....	.....	.....	.....
1913	(164)	.....	103	874	.....	.....	.....	.....
1914	111	.....	13	84	.....	.....	.....	.....
1915	141	.....	77	404	.....	.....	.....	.....
1916	607	.....	(16)	1,371	.....	.....	.....	.....
1917	1,006	.....	288	3,053	.....	30	.....	.....
1918	126	.....	153	3,437	.....	31	.....	.....
1919	47	.....	215	2,491	.....	65	.....	.....
1920	832	.....	(163)	2,588	.....	126	.....	.....
1921	1,721	.....	403	(3,067)	.....	225	.....	.....
1922	1,613	.....	269	1,403	.....	469	.....	.....
1923	957	.....	289	2,634	.....	537	.....	.....
1924	1,261	.....	174	2,196	.....	702	.....	.....
1925	10,194	6,255	158	1,020	291	1,160	.....	.....
1926	.....	.....	393	934	1,836	1,321	367	1,107
1927	.....	331	440	1,006	.....	.....	224	.....
	24,563	6,586	4,367	18,885	2,127	4,666	591	1,107

EXHIBIT A-228

Analysis of Profits on Business Other Than With Bell Telephone Companies from 1881 to 1927, Inclusive

(Dollars in Thousands)

c	d	e	f	g	h	i	j	k	
Net Profit on Sales to reign Customers for Export 1881 to 1927 Inclusive	Net Profit on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to Graybar Electric Company, Inc. during 1926 and 1927	Royalties Received on Vitaphone, Permalloy Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	Specific Development and General Expense Applicable to Vitaphone, Permalloy, Phonograph and Submarine Cable Business	Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927	Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies	Revaluation to Increase the Stock of the Electrical Research Products Inc. on Books of Western Electric Co., Inc. Due to the Electrical Research Products Inc. Writing Up Value of Stock of Its Subsidiary Companies (Northern Electric Co., Ltd. and Graybar Electric Co., Inc.) from Cost to Book Value	Revaluation to Increase the Stock of the Electrical Research Products Inc. on Books of Western Electric Co., Inc. Due to Undistributed Current Earnings of Electrical Research Products Inc. for the Year 1927	Total (a to e) −f+(g to j)	
$118	$370	.....	.....	.....	.....	.....	.....	$717	1
147	428	.....	.....	.....	.....	.....	.....	1,187	2
363	(146)	.....	.....	.....	.....	.....	.....	749	3
439	(1,401)	.....	.....	.....	.....	.....	.....	604	4
118	(196)	.....	.....	.....	.....	.....	.....	646	5
86	(73)	.....	.....	.....	.....	.....	.....	561	6
3	(816)	.....	.....	.....	.....	.....	.....	(46)	7
60	(215)	.....	.....	.....	.....	.....	.....	382	8
81	52	.....	.....	.....	.....	.....	.....	857	9
64	(80)	.....	.....	.....	.....	.....	.....	(197)	10
92	534	.....	.....	.....	.....	.....	.....	679	11
103	874	.....	.....	.....	.....	.....	.....	813	12
13	84	.....	.....	.....	.....	.....	.....	208	13
77	404	.....	.....	.....	.....	.....	.....	622	14
(16)	1,371	.....	.....	.....	.....	.....	.....	1,962	15
288	3,053	.....	30	.....	.....	.....	.....	4,317	16
153	3,437	.....	31	.....	.....	.....	.....	3,685	17
215	2,491	.....	65	.....	.....	.....	.....	2,688	18
(163)	2,588	.....	126	.....	.....	.....	.....	3,131	19
403	(3,067)	.....	225	.....	.....	.....	.....	(1,168)	20
269	1,403	.....	469	.....	.....	.....	.....	2,816	21
289	2,634	.....	537	.....	.....	.....	.....	3,343	22
174	2,196	.....	702	.....	.....	.....	.....	2,929	23
158	1,020	291	1,160	.....	.....	.....	.....	16,758	24
393	934	1,836	1,321	367	1,107	.....	.....	3,316	25
440	1,006	.....	.....	224	.....	4,680	5,258	11,939	26
4,367	18,885	2,127	4,666	591	1,107	4,680	5,258	63,498	27

EXHIBIT A-229

Statement Showing Analysis of Profits on Business Other Than With Bell Customers. (See Statement 1.)

(Expressed in Thousands of Dollars)

	a	b	c	d	e	f	
		Net Profits on Sales to					
Years	Total	Other Domestic Customers (Including Government) (R)	Foreign Customers for Export (R)	Interest & Dividends and Other Income Received on Investment in Foreign Business (R)	Miscellaneous Foreign Customers	Miscellaneous Other Domestic Customers	
July 1, 1881 to November 30, 1890	$717	$370	$118	$229	$.....	$.....	1
1891 to 1895	1,187	428	147	612	.....	.....	2
1896 to 1900	749	(146)	363	532	.....	.....	3
1901 to 1905	604	(1,401)	439	1,566	.....	.....	4
1906	646	(196)	118	724	.....	.....	5
1907	561	(73)	86	548	.....	.....	6
1908	(46)	(816)	3	767	.....	.....	7
1909	382	(215)	60	537	.....	.....	8
1910	857	52	81	724	.....	.....	9
1911	(197)	(80)	64	(181)	.....	.....	10
1912	679	534	92	53	.....	.....	11
1913	813	874	103	(164)	.....	.....	12
1914	208	84	13	111	.....	.....	13
1915	622	404	77	141	.....	.....	14
1916	1,962	1,371	(16)	607	.....	.....	15
1917	4,347	3,053	288	1,006	.....	.....	16
1918	3,716	3,437	153	126	.....	.....	17
1919	2,753	2,491	215	47	.....	.....	18
1920	3,257	2,588	(163)	832	.....	.....	19
1921	(943)	(3,067)	403	1,721	.....	.....	20
1922	3,285	1,403	269	1,613	.....	.....	21
1923	3,880	2,634	289	957	.....	.....	22
1924	3,631	2,196	174	1,261	.....	.....	23
1925	16,481	(126)	158	10,194 (U)	6,255 (X)	.....	24
1926	1,588	934	393	261 (V)	.....	.....	25
1927	11,759	634	440	3,194 (W)	331 (Y)	7,160 (Z)	26
	63,498 (S)	17,367	4,367	28,018	6,586	7,160	27

EXHIBIT A-229—Continued

[fol. 3372]

R Information compiled from Historical Charts 1881 to 1925; for years 1926 and 1927, from annual reports.

S Reclassified as follows:

	Total	Other Domestic Business	Foreign Business
Manufacturing Profits	$10,468	$6,101	$4,367
Other Income	53,030	18,426	34,604
	63,498	24,527	38,971

U Includes special dividend received from International Western Electric Company, Incorporated, from undistributed earnings at September 30, 1925 amounting to $9,700.

V Dividend received from Northern Electric Company.

W Analyzed as follows:

Revaluation of Northern Electric Company Stock at December 31, 1927	$2,880
Settlement of A. F. Adams Account	29
Other	285
	3,194

X Profit from sale of International Western Electric Company, Incorporated after deducting Federal Income Tax and setting aside reserve for Pension Fund in agreement with International Standard Electric Company.

Y Excess in Pension Fund Reserve for International Western Electric Company, Incorporated set up in 1925 and credited to Western Electric Company, Incorporated surplus in 1927.

Z Analyzed as follows:

Revaluation of Graybar Electric Company, Inc. at December 31, 1927	$1,800
Excess in Pension Fund Reserve for Graybar Electric Company, Inc. credited to Western Electric Company, Incorporated surplus in 1927	372
Net Profits on sales of Vitaphone, Permalloy and Phonograph	367
Net Profits in 1927 on business with Electrical Research Products Inc.	224
Interest received on investments in Government Securities	201
Interest received on certificates of deposits	300
Interest received on investment in Kansas City Telephone Company Bonds	236
Interest received on investment in Pacific Telephone and Telegraph Company Notes	149

Portion of 1927 earnings of Electrical Research Products Inc. taken into Western Electric Company, Incorporated surplus	5,258	
Development expense on special commercial products	1,146	
Interest received on Graybar Electric Company, Inc. Notes	40	
Royalties received on Vitaphone, Phonograph, etc.	1,836	
	11,929	
Less:		
Specific Development Expense	1,001	
General Expense and Federal Taxes applicable to royalties and income from investments.		
General Expense	320	
Federal Tax	109	
Specific Development Expense Applicable to.		
Vitaphone, phonograph permalloy and submarine cable 1914 to 1925 less royalties received	3,054	
Other	285	
	4,769	
Net Total		$7,160

[fol. 3373]

EXHIBIT A-230

Electrical Research Products Inc.

General Auditing Department.

Monthly Report No. 1

Condensed Summary of Results for Years 1927 to 1930, Inclusive

(Dollars in Thousands)

	a Dec. 31, 1930	b Dec. 31, 1929	c Dec. 31, 1928	d Dec. 31, 1927	
Assets and Liabilities					
1. Plant	$854	$690	$203	$45	1
2. Investments	10,170	19,675	10,597	12,761	2
3. Merchandise	6,992	6,941	4,501	1,203	3
4. Deferred Receivables	.....	3,905	4,729	3,000	4
5. Notes Receivable	1,069	18,701	2,720	1,082	5
6. Accounts Receivable	9,336	13,661	8,609	502	6
7. Cash	1,168	1,176	278	337	7
8. Total Assets	29,589	64,749	31,637	18,930	8
9. Capital (750,000 Shares no Par)	5,000	5,000	5,000	1,000	9
10. Current Liabilities—Western Electric Co., Inc.	940	3,256	3,804	317	10
11. Other	1,161	1,818	4,168	886	11
12. Notes Payable—Western Elec. Co., Inc.	11,200	43,200	12,800	14,200	12
13. Pension Fund Trustee	458	238	76	8	13
14. Notes Receivable Discounted	.....	1,500	.....	.....	14
15. Reserves for Depreciation of Plant	838	519	107	18	15
16. Depreciation on Receivables	1,891	2,176	1,760	1,000	16
17. Contingencies	2,819	1,771	.....	.....	17
18. Employees' Benefit Fund	.....	.....	.....	5	18
19. Surplus and Undivided Profits	5,282	5,271	3,922	1,496	19
20. Total Liabilities	29,589	64,749	31,637	18,930	20

	e 1930	f 1929	g 1928	h 1927	
21. Operating Revenue	$28,438	$46,523	$17,257	$3,695	21
22. Profits from Operations	8,543	14,385	6,796	1,534	22
23. Profits from Investments	5,142	2,011	4,279	6,282	23
24. Total Gross Income	13,685	16,396	11,075	7,816	24
25. General Expense	5,785	3,549	1,488	571	25
26. Engineering Expense	1,871	3,050	1,366	880	26
27. Reserves	0	640	325	767	27
28. Federal Taxes	0	678	358	94	28
29. Total Expenses	7,656	7,917	3,537	2,312	29
30. Net Earnings Available for Interest and Dividends	6,029	8,479	7,538	5,504	30
31. Interest Deductions	1,518	1,880	674	0	31
32. Net Income Available for Dividends	4,511	6,599	6,864	5,504	32

33. Dividends ($6.00 per Share 1930, $7.00 per Share 1929, $1.25 per Share 1928, $5.00 per Share 1927)	4,500	5,250	938.	3,750(A)	33
34. Undivided Profits	11	1,349	5,926	1,754	34
35. Average Investment	37,319	45,309	19,293	43,868	35
36. % Return on Investment	16.2	18.7	39.1	12.6	36
37. Net Income per Share of Stock	$6.01	$8.80	$9.15	$7.34	37

	1930	1929
Contingent Liabilities to: Chatham & Phenix Bank—New York	$3,875,000	.....
National City Bank—New York	300,000	.....
First National Bank—Boston	44,000	.....
Bankers Trust Company—New York	.....	975,937
	4,219,000	975,937

A Excludes special dividend of $45,000,000.

[fol. 3374]

EXHIBIT A-231

Electrical Research Products Inc.

Statement of Loans by Western Electric Company, Incorporated to Electrical Research Products Inc.

Date of Borrowing	1927 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
12/31	$14,200,000	6/29		$500,000			
		8/23		400,000			
		12/31		3,000,000			
		10/ 1			$700,000		
		10/ 2			300,000		
		11/25			400,000		
		1/10				$800,000	
		5/12				400,000	
		5/31				7,700,000	
Total	$14,200,000			$3,900,000	$1,400,000	$8,900,000	
	1928						
8/11	$100,000	8/23		$100,000			
9/11	200,000	5/31				$200,000	
10/11	300,000	5/31				300,000	
11/30	300,000	5/31				300,000	
12/11	500,000	5/31				500,000	
12/22	300,000	5/31				300,000	
12/31	900,000	5/31				900,000	
Total	$2,600,000			$100,000		$2,500,000	

[fol. 3375]

Date of Borrowing	1929 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000	5/31				$500,000	
1/31	1,000,000	5/31				1,000,000	
2/11	1,000,000	5/31				1,000,000	
2/23	400,000	5/31				400,000	
8/26	15,000,000	5/6				5,000,000	
		5/13				3,000,000	
		3/20				1,000,000	
		7/2				1,000,000	
		9/23				5,000,000	
2/28	500,000	5/28				500,000	
3/11	600,000	7/31				600,000	
3/22	900,000	7/31				400,000	
		8/11				500,000	
3/30	300,000	7/24				300,000	
4/30	500,000	8/11				500,000	
5/22	700,000	5/31				700,000	
5/31	600,000	9/5				[illegible]	
		10/30					
6/11	700,000	10/30					
		11/11					
6/22	660,000	11/22					
		11/29					
7/11	700,000	11/29					$500,000
7/22	600,000						600,000
7/31	300,000						300,000
11/30	500,000						500,000
12/11	200,000						200,000
12/23	700,000						700,000
12/30	1,300,000						1,300,000
12/31	4,200,000						4,200,000
Total	31,800,000					23,500,000	8,300,000

EXHIBIT A-231—Continued

[fol. 3376]

Date of Borrowing	1930 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000	....	.....	.....	.....	.....	$500,000
1/31	100,000	....	.....	.....	.....	.....	100,000
2/11	100,000	....	.....	.....	.....	.....	100,000
6/39	300,000	....	.....	.....	.....	.....	300,000
9/30	300,000	....	.....	.....	.....	.....	300,000
12/31	1,600,000	....	.....	.....	.....	.....	1,600,000
Total	2,900,000	....	.....	.....	.....	.....	2,900,000
Grand Total	51,500,000	....	.....	$4,000,000	$1,400,000	$34,900,000	$11,200,000
Balance End of Year			$14,200,000	$12,800,000	$43,200,000	$11,200,000	.....

[fol. 3377] EXHIBIT A-235

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1927 Under Operations

(Dollars in Thousands)

1. Operating Revenue of			$3,695
is made up of the following:			
	Description	Amount	
	Equipment License Fees.....	$1,855	
	Service Fees.....	312	
	Income from Royalties.....	1,274	
	Miscellaneous Sales.....	254	
		3,695	
2. Operating Cost.....			1,963
	Equipment.....	1,282	
	Direct Labor.....	143	
	Contract Labor and Material.	97	
	Direct Expense.....	206	
	Operating Administration and Merchandising Expense...	235	
		1,963	
3. Royalties Distributed to Others.....			254
4. Gross Profit from Operations.....			1,478
5. Interest Received Credited to Operations.....			56
6. Profits from Operations.....			1,534
7. Profits from Investments of.....			6,282
is made up of the following:			
	Description		Amount
(a)	Income from Sundry Investments....		$2,114
	Represents Dividends Received from the following:		
	1. Graybar Electric Co., Inc.....	$1,800	
	2. Northern Electric Co., Ltd.....	314	
		2,114	

EXHIBIT A-235—Continued

Description	Amount		
(b) Interest		1,246	
(c) Sale of Option	2,673		
(d) Miscellaneous Income		249	
		6,282	
8. Total Gross Income			7,816
[fol. 3378] 9. General Expense			$571
is made up of:			
Salaries		226	
Traveling		18	
State and Local Taxes		2	
Incorporation Expense		50	
Telephone and Telegraph		6	
Rent and House Service		10	
Employees: Benefits		10	
Foreign Taxes on Royalties Received		22	
W. E. Co. Services		150	
Other		77	
		571	
10. Engineering Expense			880
Analyzed as follows:			
B. T. L. Billing	$705		
Patent Expense			
Broadway	$36		
London	70		
		106	
Other	69		
		880	
11. Federal Income Tax			94
12. Reserves			767
13. Total Expenses			2,312
14. Net Earnings Available for Interest and Dividends			5,504
15. Interest Deductions			0
16. Net Income Available for Dividends			5,504
17. Dividends			3,750
18. Undivided Profits			1,754

[fol. 3379]

Description	Amount

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1928 Under Operations

(Dollars in Thousands)

1. Operating Revenue of		$17,257
is made up from the following:		
Equipment License Fees	$13,889	
Service Fees	946	
Income from Royalties	1,525	
Replacement License Fees	296	
Export Sales	475	
Miscellaneous Sales	126	
	17,257	
2. Operating Cost		10,200
Equipment	7,434	
Direct Labor	576	
Contract Labor and Material	729	
Direct Expense	670	
Operating Administration and Supervision	452	
Merchandising and Warehouse Expense	339	
	10,200	
3. Royalties Distributed to Others		400
4. Gross Profit from Operations		6,657
5. Interest Received Credited to Operations		139
6. Profits from Operations		6,796
7. Profits from Investments of		4,279
is made up from the following:		

Description		Amount
(a) Income from Sundry Investments		$2,271
Represents Dividends Received from the following:		
1. Graybar Electric Co., Inc.	$2,010	
2. Northern Electric Co., Ltd.	261	
	2,271	

EXHIBIT A-235—Continued

Description	Amount		
(b) Interest		100	
(c) Accrued Discount on Sale of Option		120	
(d) Income from Sundry Investments		1,788	
1. Revaluation of German War Claim	1,717		
2. Settlement of Berlin Mark Account	71		
	1,788	4,279	
8. Total Gross Income			11,075
[fol. 3380] 9. General Expense			$1,488
Is made up of:			
Salaries		$507	
Travelling		43	
State and Local Taxes		18	
Legal Services		204	
Telephone and Telegraph		40	
Rent and House Service		33	
Foreign Taxes on Royalties Received		84	
W. E. Co. Services		189	
Employees' Benefits		10	
Other		360	
		1488	
10. Engineering Expense			1,366
Analyzed as follows:			
B. T. L. Billing		880	
Royalties Paid		316	
Patent Expense:			
Broadway	$51		
London	96		
		147	
Experimental Work and Supplies		16	
Other		7	
		1,366	
11. Federal Income Tax			358
12. Reserves			325
13. Total Expense			3,537

Description	Amount
14. Net Earnings Available for Interest and Dividends	7,538
15. Interest Deductions	674
16. Net Income Available for Dividends	6,864
17. Dividends	938
18. Undivided Profits	5,926

[fol. 3381]

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1929 Under Operations

(Dollars in Thousands)

1. Operating Revenue of is made up from the following:		$46,523
Description	Amount	
Equipment License Fees	$29,233	
Service Fees	3,372	
Income from Royalties	2,896	
Replacement License Fees	1,032	
Export Sales	9,896	
Educational License Fees	6	
Miscellaneous Sales	88	
	46,523	
2. Operating Cost		32,063
Equipment	22,823	
Direct Labor	2,076	
Contract Labor and Material	1,894	
Direct Expense	2,759	
Operating Administration and Supervision	1,310	
Merchandising and Warehouse Expense	1,201	
	32,063	
3. Royalties Distributed to Others		1,372
4. Gross Profit from Operations		13,088

EXHIBIT A-235—Continued

Description	Amount	
5. Interest Received Credited to Operations		1,297
6. Profits from Operations		14,385
7. Profits from Investments of		2,011
is made up from the following:		
Description	Amount	
(a) Income from Sundry Investments	$1,760	
Represents Dividends Received from the following:		
1. Graybar Electric Co., Inc.	$1,501	
2. Northern Electric Co., Lt	259	
	1,760	
(b) Interest	8	
(c) Accrued Discount on Sale of Option	207	
(d) Miscellaneous Income	36	
	2,011	
8. Total Gross Income		16,396
[fol. 3382] 9. General Expense		$3,549
Is made up of:		
Salaries	$1,553	
Traveling	160	
State and Local Taxes	48	
Legal Services	92	
Telephone and Telegraph	119	
Rent and House Service	145	
Foreign Taxes on Royalties Received	63	
W. E. Co. Services	279	
Employees' Benefits	51	
Branch Office	178	
Other	861	
	3,549	
10. Engineering Expense		3,050
Analyzed as follows:		
B. T. L. Billing	1,204	
Royalties Paid	809	

Description	Amount	
Patent Expense:		
Broadway	$159	
London	302	461
Experimental Work and Supplies		187
Engineering Expense on Submarine Cables		389
		3,050
11. Federal Income Tax		678
12. Reserves		640
13. Total Expenses		7,917
14. Net Earnings Available for Interest and Dividends		8,479
15. Interest Deductions		1,880
16. Net Income Available for Dividends		6,599
17. Dividends		5,250
18. Undivided Profits		1,349

[fol. 3383]

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1930 Under Operations

(Dollars in Thousands)

1. Operating Revenue of $28,438
is made up from the following:

Description	Amount
Equipment License Fees	$11,117
Service Fees	5,526
Income from Royalties	4,024
Replacement License Fees	1,839
Export Sales	5,490
Educational License Fees	413
Miscellaneous Sales	29
	28,438

EXHIBIT A-235—Continued

Description	Amount	
2. Operating Cost		19,109
Equipment	11,231	
Direct Labor	2,424	
Contract Labor and Material	517	
Direct Expense	2,905	
Operating Administration and Supervision	902	
Merchandising and Warehouse Expense	1,130	
	19.109	
3. Royalties distributed to others		1,442
4. Gross profit from Operations		7,887
5. Interest received credited to Operations		656
6. Profits from Operations		8,543
7. Profits from Investments of		5,142
is made up from the following:		

Description		Amount
(a) Income from Sundry Investments		3,848
Represents Dividends Received from the following:		
1. Graybar Electric Co., Inc.	$309	
2. Northern Electric Co., Ltd.	163	
3. Foreign Subsidiaries	3,376	
	3,848	
(b) Interest		491
(c) Revaluation of N. E. Co., Ltd. Stock		843
(d) Revaluation of German War Claim		(40)
		5,142

8. Total Gross Income	13,685

[fol. 3384]

9. General Expense	$5,785
is made up of:	

Description	Amount		
Salaries		$2,558	
Traveling		433	
State and Local Taxes		99	
Legal Services		99	
Telephone and Telegraph (57th St.)		110	
Rent and House Service		238	
Foreign Taxes on Royalties and Dividends Received		785	
W. E. Co. Services		285	
Employees' Benefits		125	
Branch Office		307	
Other		796	
		5,785	
10. Engineering Expense			1,871
Analyzed as follows:			
B. T. L. Billing		1,003	
Royalties paid		305	
Patent Expense:			
Broadway	$304		
London	34		
		338	
Changes in Design		99	
Experimental Work and Supplies		185	
Other		70	
		2,000	
Deduct Billing to Foreign Subsidiaries		(129)	
		1,871	
11. Total Expenses			7,656
12. Net Earnings Available for Interest and Dividends			6,029
13. Interest Deductions			1,518
14. Net Income Available for Dividends			4,511
15. Dividends			4,500
16. Undivided Profits			11

[fol. 3385] EXHIBIT A-236

Number of Employees of Western Electric Company, Inc. 1916-1930

	Number of Employees at January 1	Additions During Year (Approximate)	Separations During Year (Approximate)	Number of Employees at December 31
1916	17,135	Not Available	Not Available	26,878
1917	26,878	Not Available	Not Available	30,737
1918	30,737	Not Available	Not Available	26,126
1919	26,126	19,611	18,153	27,584
1920	27,584	44,000	31,934	39,650
1921	39,650	44,422	38,829	45,243
1922	45,243	46,211	40,292	51,162
1923	51,162	68,602	55,956	63,808
1924	63,808	33,410	48,061	49,157
1925	43,922*	15,802	20,264	39,460
1926	39,460	29,121	23,471	45,110
1927	45,110	14,787	19,332	40,565
1928	40,565	31,813	16,054	56,324
1929	56,324	65,416	36,892	84,848
1930	84,848	17,253	37,848	64,253

* Excludes Supply and Engineering Departments.

[fol. 3386] EXHIBIT A-237

Central Office Equipment

	Large Multiple	Small Multiple	Panel Lines	Step-by-Step Lines
Inside Section:				
Cords	x	x	x	x
Plugs	x	x	x	x
Lamps	x	x	x	x
Keys	x	x	x	x
Jacks	x	x	x	x
Designation Strips	x	x	x	x
Jack Spaces	x	x	x	x
Relays	x	x	x	x
Resistances	x	x	x	x
Repeating Coils	x	x	x	x
Retardation Coils	x	x	x	x
Condensers	x	x	x	x
Induction Coils	x	x	x	x
Number Plates	x	x	x	x
Terminal Strips	x	x	x	x
Switchboard Cable	x	x	x	x
Switchboard Wire	x	x	x	x
Message Registers	x	..	..	..
Test Strips	..	..	x	x
Dials	..	..	x	x
Outside Section:				
Distributing Frame	x	x	x	x
Protectors	x	x	x	x
Terminal Strips	x	x	x	x
Relay Racks	x	x	x	x
Coil Racks	x	..	x	x
Fuse Boards	x	x	x	x
Message Register Racks	x	..	x	x
Cable Racks	x	x	x	x
Switchboard Cable	x	x	x	x
Switchboard Wire	x	x	x	x
Jumper Wire	x	x	x	x
Power Plant	x	x	x	x
Line Finders	..	..	x	x
Selectors	..	..	x	x
Connectors	..	..	..	x
Senders	..	..	x	..

(Here follow photos, side folios 3387-3396)

(5)

EXHIBIT A-238

INDIANA BELL TELEPHONE COMPANY

Muncie - Indiana Per Cent Relation

	1916-1920			1912-1921			1913-1922			
	Cost of Reproduction	Condition Per Cent	Present Condition	Conversion Per Cent	Cost of Reproduction	Present Condition	Conversion Per Cent	Cost of Reproduction	Present Condition	Conversion Per Cent
Account 211	8 000 00	100	8 000 00		8 000 00	8 000 00		8 000 00	8 000 00	
207	11 491 68	100	11 491 68		10 034 31	10 034 31		10 712 04	10 712 04	
241	198 818 65	79	157 066 73	87.30	173 568 65	137 [illegible] 26	95.17	189 215 71	[illegible] 41	135.44
242	163 447 42	89	145 46[illegible] 20	86.19	140 875 33	12[illegible] 04	90.72	[illegible] 50	13[illegible] 75	112.81
243	84 878 51	90	76 [illegible] 66	87.52	74 285 67	66 [illegible] 11	92.75	78 724 82	70 [illegible] 34	110.78
244	62 001 44	92	55 [illegible] 30	89.92	55 751 69	50 [illegible] 53	96.07	59 564 78	53 [illegible] 31	123.37
245	65 078 13	94	61 [illegible] 44	87.47	56 723 84	53 [illegible] 41	91.42	59 494 43	55 [illegible] 76	111.45
231	39 814 34	91	36 23[illegible] 05	97.27	38 727 41	35 [illegible] 94	102.95	40 988 86	37 [illegible] 87	126.02
232	19 958 40	85	16 96[illegible] 64	82.19	16 403 81	[illegible] 24	88.75	17 713 08	15 [illegible]	140.62
233	360 11	91	327 70	86.12	310 13	[illegible]	89.57	322 55	[illegible]	96.87
234	15 323 91	92	14 098 00	90.42	13 855 88	12 747 41	96.26	14 750 80	13 [illegible] 70	137.93
235	1 964 84	89	1 748 71	94.07	848 32	[illegible]	99.83	1 961 50	1 [illegible] 74	142.89
212	22 000 00	75	16 500 00		22 000 00	16 500 00		22 000 00	16 500 00	
221	119 560 00	90	107 604 00	87.11	104 148 72	9[illegible] 33 84	94.46	112 936 38	101 [illegible] 74	134.57
222	3 739 16	90	3 365 24	89.60	3 350 29	3 015 [illegible]	94.28	3 517 80	3 [illegible]	107.49
Sub Total	816 436 59		712 231 33	88.20	720 084 [illegible]	628 [illegible] 58	94.09	768 182 [illegible]	669 [illegible] 35	124.11
Overhead Construction Cost including omissions from inventory engineering general and miscellaneous taxes and interest during construction	162 320 81		141 [illegible] 13	88.20	143 166 95	124 893 96	94.09	152 727 65	133 234 39	[illegible]
261	7 197 90	85	6 [illegible] 22	76.46	5 503 51	4 677 99	84.57	6 087 [illegible]	5 174 [illegible] 8	95.30
263	730 38	80	[illegible] 13	75.80	553 63	476 12	82.39	601 76	5[illegible] 52	104.63
264	5 054 22	69	3 4[illegible] 41	105.14	5 314 [illegible]	3 666 66	99.82	5 045 [illegible]	[illegible]	68.04
265	2 180 35	77	1 678 27	76.89	1 676 [illegible]	1 290 88	85.15	1 856 57	1 [illegible] 56	124.96
Material and Supplies	21 492 03	100	21 492 03		21 492 03	21 492 03		21 492 03	21 492 03	

EXHIBIT A-238

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INDIANA BELL TELEPHONE COMPANY

Muncie - Indiana = Per Cent Relation - Certain Periods to Certain Other Periods - Total Plant

1912-1921 Conversion Per Cents	1912-1921 Cost of Reproduction	1912-1921 Present Condition	1913-1922 Conversion Per Cents	1913-1922 Cost of Reproduction	1913-1922 Present Condition	Nov-1922 Conversion Per Cent	Nov-1922 Cost of Reproduction	Nov-1922 Present Condition	1913 Conversion Per Cent	1913 Cost of Reproduction	1913 Present Condition
	8 000 00	8 000 00		8 000 00	8 000 00		8 000 00	8 000 00		8 000 00	8 000 00
	10 034 31	10 034 31		10 712 04	10 712 04		14 043 11	14 043 11		7 034 55	7 034 55
87.30	173 568 65	137 [illegible] 26	95.17	189 215 71	[illegible]	135.44	269 279 98	[illegible]	52.35	105 075 66	[illegible]
86.19	140 875 33	[illegible] 04	90.72	48 279 50	[illegible]	112.81	184 335 03	[illegible]	64.91	66 093 72	[illegible]
87.52	74 285 67	[illegible] 11	92.75	78 724 82	[illegible]	110.78	99 [illegible]	[illegible]	63.34	53 762 05	[illegible]
89.92	55 751 69	[illegible] 53	96.07	59 564 78	[illegible]	123.37	76 491 18	[illegible]	71.87	44 560 43	[illegible]
87.47	56 923 84	53 [illegible] 41	91.42	59 494 43	[illegible]	111.45	[illegible]	[illegible]	[illegible]	42 020 95	[illegible]
97.27	38 727 41	[illegible] 94	102.75	40 988 86	[illegible]	126.02	50 174 03	[illegible]	85.34	31 986 84	[illegible]
82.19	16 403 81	[illegible]	88.75	17 713 08	[illegible]	140.62	28 [illegible] 50	[illegible]	[illegible]	[illegible] 65	[illegible]
86.12	310 13	[illegible]	89.57	322 55	[illegible]	96.87	348 84	[illegible]	[illegible]	214 66	[illegible]
90.42	13 855 88	12 747 [illegible]	96.26	14 750 [illegible]	[illegible]	137.93	21 136 27	[illegible]	[illegible]	11 382 60	[illegible]
94.07	848 32	[illegible]	99.83	1 961 50	[illegible]	142.89	[illegible] 56	[illegible]	[illegible]	481 49	[illegible]
	22 000 00	16 500 00		22 000 00	16 500 00		22 000 00	16 500 00		22 000 00	16 500 00
87.11	104 148 72	[illegible] 84	94.46	112 936 38	[illegible]	134.57	160 891 39	[illegible]	[illegible]	[illegible]	70 867 [illegible]
89.60	3 350 29	[illegible]	94.08	3 517 [illegible]	[illegible]	107.49	4 019 22	3 617 30	[illegible]	2 710 94	[illegible]
[illegible]	720 084 [illegible]	[illegible] 58	94.09	768 182 [illegible]	[illegible]	[illegible]	1 013 293 31	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	143 166 95	124 893 96	94.09	152 727 65	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
76.46	5 503 59	4 677 99	84.57	[illegible]	[illegible]	75.30	6 859 [illegible]	[illegible]	[illegible]	[illegible] 80	[illegible]
75.80	553 63	[illegible]	82.39	[illegible]	[illegible]	104.63	764 [illegible]	[illegible]	[illegible]	358 32	[illegible]
105.14	[illegible]	[illegible]	99.82	[illegible]	[illegible]	[illegible]	3 438 89	[illegible]	[illegible]	[illegible] 50	[illegible]
76.89	[illegible]	[illegible] 88	85.15	[illegible] 57	[illegible]	124.96	[illegible]	[illegible]	42.76	932 32	[illegible]
	21 492 03	[illegible]		21 492 03	[illegible]		21 492 03	[illegible]		21 492 03	21 492 03

| | | |

955 992 64 835 15
143 64 90
94 15 90
188 24 70
121 [illegible] 70
100.00%
65.40%

EXHIBIT A-239

STATEMENT 5

INDIANA BELL TELEPHONE COMPANY

Muncie INDIANA EXCHANGE

	Appraisal		Percent Av. 1913-1922	Average Cost 1913-1922		
	5 Yr. Ave. R.C.N.	1916-1920 Pres. Cond.	5 Yr. Av. 1916-1920	Cost of Reproduction	Condition Percent	Present Condition
A - LAND						
A-1 Acct. 207	11491.68	11491.68	[redacted]	10712.04	100	10712.04
A-2 " 211	8000.00	8000.00	100.00	8000.00	100	8000.00
B - DISTRIBUTION SYSTEM						
B-1 Acct. 241	198818.65	157066.73	95.17	189215.71	79	149480.41
B-2 " 242	163447.43	148468.20	90.72	148279.50	89	131,968.75
B-3 " 243	84878.51	76390.66	92.75	78724.82	90	70,852.34
B-4 " 244	62001.44	55801.30	96.07	59564.78	90	53,608.31
B-5 " 245	65078.18	61173.44	91.42	59494.43	94	55924.76
B-6 " 231	39814.34	36231.05	102.95	48988.86	91	37,299.86
B-7 " 232	19958.40	16964.64	88.75	17713.08	85	15,056.12
B-8 " 233	360.11	327.70	89.57	322.55	91	293.52
B-9 " 234	15323.91	14098.00	96.26	14750.80	92	13,576.73
B-10 " 235	1964.84	1748.71	99.83	1961.50	89	1745.74
C - EXCHANGE BLDG.						
C-1 Acct. 212	22000.00	16500.00	100.00	22,000.00	75	16,500.00
D - CENTRAL OFFICE EQUIPMENT						
D-1 Acct. 221	119560.00	107604.00	94.46	112936.38	90	101,642.74
D-2 " 222	3739.16	3365.24	94.08	3517.80	90	3,166.02
Sub Total	816436.59	712231.35	94.09	768182.25		669,821.34
Overheads	162320.81	141608.13		152,727.65		133,234.38
E - GENERAL EQUIPMENT						
E-1 Acct. 261	7197.90	6118.22	84.57	6087.76	85	5174.18
[redacted]			[redacted]			
E-2 [redacted] " 263	730.38	628.13	82.39	601.76	86	517.52
E-3 [redacted] " 264	5054.22	3487.41	99.82	5045.12	69	3,481.13
E-4 [redacted] " 265	2180.35	1678.87	85.15 [redacted]	1856.57	77	1429.56
Material and Supplies	21492.03	21492.03	100.00	21492.03	100	21492.03
Total Net Additions From 11-1-19 To 7-31-23	1015412.28	887239.14		955,992.64 102,785.10		835,150.14 116,777.29
Total Plant Net Additions from 11-1-19 to 7-31-23 Total Plant				1,058,777.74		951,927.43

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STATEMENT D

EXHIBIT A-240

INDIANA BELL TELEPHONE COMPANY

Muncie INDIANA EXCHANGE

	Appraisal		Percent Av. Nov-1922	Current Costs - November 1922		
	5 Yr. Ave. R.C.N.	1916-1920 Pres. Cond.	5 Yr. Av. 1916-1920	Cost of Reproduction	Condition Percent	Present Condition
A - LAND						
A-1 Acct. 207	11491.68	11491.68		14043.11	100	14,043.11
A-2 " 211	8000.00	8000.00	100.00	8000.00	100	8,000.00
B - DISTRIBUTION SYSTEM						
B-1 Acct. 241	198818.65	157066.73	135.44	269279.95	79	212,731.18
B-2 " 242	163447.42	145468.20	112.81	184355.03	89	164102.68
B-3 " 243	84878.51	76390.66	116.78	99121.12	90	89,209.01
B-4 " 244	62001.44	55801.30	123.37	76491.15	90	68842.06
B-5 " 245	65078.13	61173.44	111.45	72529.53	94	68177.80
B-6 " 231	39814.34	36231.05	126.02	50174.03	91	45,658.37
B-7 " 232	19758.43	16964.64	140.62	28065.50	85	23855.68
B-8 " 233	360.11	327.70	96.87	348.84	91	317.44
B-9 " 234	15323.91	14098.00	137.93	21136.27	92	19445.37
B-10 " 235	1964.24	1748.71	142.89	2,807.56	89	2498.73
C - EXCHANGE BLDG.						
C-1 Acct. 212	22000.00	16500.00	100.00	22000.00	75	16,500.00
D - CENTRAL OFFICE EQUIPMENT						
D-1 Acct. 221	119560.00	107604.00	134.57	160891.89	90	144802.70
D-2 " 222	3739.16	3365.24	107.49	4019.22	90	3617.30
Sub Total	816436.59	712231.35	(124.11)	1013293.31		881,801.43
Overheads -	162320.81	141603.13		201,45636		175,743.64
E - GENERAL EQUIPMENT						
E-1 Acct. 261	7197.90	6118.22	95.30	6859.60	85	5830.66
[redacted]						
E-2 [redacted] " 263	730.38	628.13	104.63	764.20	86	657.21
E-3 [redacted] " 264	5054.22	3487.41	68.04	3438.89	69	2372.83
E-4 [redacted] " 265	2180.35	1678.87	124.96	2724.561	77	2097.92
Material and Supplies	21492.03	21492.03	100.00	21492.03	100	21,492.03
Total Net Additions From 1-1-19 To 10-31-22	1015412.28	887239.14		1,250,028.95 45672.28		1,089,995.72 59,368.75
Total Plant				1,295701.25		1,149,364.47

3989

3112D

3390

P 1

EXHIBIT A-233

WESTERN ELECTRIC COMPANY, INCORPORATED

STATEMENT OF CAPITAL STOCK ISSUED AND INCREASE OR DECREASE IN SURPLUS FROM DATE OF INCORPORATION TO DECEMBER 31, 1930.

Date of Issuance and December 31 of Each Year	Description of Changes and Issuance of Capital Stock Structure	Common Stock Issued: No. of Shares	Common Stock Issued: Par Value	Common Stock Issued: For Cash	Common Stock Issued: From Surplus	Common Stock Issued: Value	Preferred Stock Issued: No. of Shares	Preferred Stock Issued: Par Value	Preferred Stock Issued: For Cash	Preferred Stock Issued: From Surplus	Preferred Stock Issued: Value	Trend Total Number of Shares and Value at End of Each Year: Common Stock: No. of Shares	Trend Total Number of Shares and Value at End of Each Year: Common Stock: Value	Trend Total Number of Shares and Value at End of Each Year: Preferred Stock: No. of Shares	Trend Total Number of Shares and Value at End of Each Year: Preferred Stock: Value	Balance in Surplus Account in Years Then Ended	Total Capital and Surplus End of Each Year	
Feb. 15 to May 18, 1882	Original Stock Issue	8,800	$100	$ 880,000	$	$ 880,000						8,800	$ 880,000			$ 68,009	$ 948,009	1
July 30, 1883		1,800	100	180,000		180,000												2
Dec. 31, 1883												10,000	1,000,000			218,496	1,218,496	3
Dec. 31, 1884												10,000	1,000,000			280,808	1,280,808	4
Dec. 31, 1885												10,000	1,000,000			222,097	1,222,097	5
Dec. 31, 1886												10,000	1,000,000			347,878	1,347,878	6
Dec. 31, 1887												10,000	1,000,000			443,580	1,443,580	7
Dec. 31, 1888												10,000	1,000,000			832,843	1,832,843	8
Dec. 31, 1889												10,000	1,000,000			998,487	1,998,487	9
Oct. 26, 1890		1,250	100	125,000		125,000												10
Nov. 5, 1890		5,000	100		500,000	500,000												11
Nov. 28, 1890		1,250	100	125,000		125,000												12
Dec. 31, 1890																		13
Dec. 31, 1891												17,500	1,750,000			804,287	2,554,287	14
Dec. 31, 1892												17,500	1,750,000			1,112,608	2,862,608	15
Dec. 31, 1893												17,500	1,750,000			1,908,536	3,658,536	16
Apr. 27, 1894		2,500	100		250,000	250,000						17,500	1,750,000			1,718,010	3,468,010	17
Dec. 31, 1894																		18
Mar. 18, 1895		10,000	100		1,000,000	1,000,000						20,000	2,000,000			1,758,813	3,758,813	19
Dec. 31, 1895																		20
Dec. 31, 1896												30,000	3,000,000			1,166,229	4,166,229	21
Dec. 31, 1897												30,000	3,000,000			1,657,108	4,657,108	22
Jan. 31, 1898		8,000	100		800,000	800,000						30,000	3,000,000			2,567,488	5,567,488	23
Dec. 31, 1898																		24
Aug. 25, 1899		15,000	100		1,500,000	1,500,000						38,000	3,800,000			3,088,887	6,888,887	25
Sept. 20, 1899		10,000	100	1,000,000		1,000,000												26
Dec. 31, 1899																		27
Sept. 1, 1900		10,000	100	1,000,000		1,000,000						60,000	6,000,000			3,967,480	9,967,480	28
Dec. 31, 1900																		29
Mar. 1, 1901		10,000	100		1,000,000	1,000,000						70,000	7,000,000			7,081,894	14,081,894	30
Dec. 31, 1901																		31
Mar. 10, 1908		20,000	100		2,000,000	2,000,000						80,000	8,000,000			8,811,894	16,811,894	32
Dec. 31, 1908																		33
Mar. 10, 1908		20,000	100		2,000,000	2,000,000						100,000	10,000,000			9,139,439	19,139,439	34
Dec. 31, 1908																		35
Dec. 31, 1904												120,000	12,000,000			9,009,787	21,009,787	36
Dec. 31, 1905												120,000	12,000,000			10,689,518	22,689,518	37
Mar. 31, 1906		30,000	100	3,000,000		3,000,000						120,000	12,000,000			13,016,887	27,016,887	38
Dec. 31, 1906																		39
Dec. 31, 1907												120,000	12,000,000			20,101,907	32,101,907	40
Dec. 31, 1908												120,000	12,000,000			18,781,811	73,781,811	41
Dec. 31, 1909												120,000	12,000,000			14,044,882	31,844,882	42
Dec. 31, 1910												120,000	12,000,000			17,480,788	29,480,788	43
Dec. 31, 1911												120,000	12,000,000			19,121,882	36,121,882	44
Dec. 31, 1912												120,000	12,000,000			20,101,804	32,101,804	45
Dec. 31, 1913												120,000	12,000,000			21,140,784	33,140,784	46
Dec. 31, 1914												120,000	12,000,000			22,840,480	37,840,480	47
Nov. 19, 1918	Capital Stock Structure of the Western Electric Company, Incorporated of Illinois	150,000	100	6,250,000	9,750,000	15,000,000	0	0	0	0	0	120,000	12,000,000			24,011,419	33,011,419	48
	Common Stock was retired and 6% Preferred Stock was issued share for share and	(150,000)	100	(6,250,000)	(9,750,000)	(15,000,000)	150,000	100	6,250,000	8,750,000	15,000,000							49
	See Common Stock Issued	150,000 Re Par			(Y)	(Y)								150,000	15,000,000			50

ANALYSIS OF CAPITAL STOCK STRUCTURE SINCE COMMENCEMENT OF BUSINESS TO DECEMBER 31, 1930.

Date of Issuance and December 31 of Each Year	Description of Changes and Increases of Capital Stock Structure	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	
		Common Stock Issued					Preferred Stock Issued					Grand Total Number of Shares and Values at End of Each Year				Balance in Surplus Account in Years Them Ever	Total Capital and Surplus End of Each Year	
		No. of Shares	Par Value	Par Cash	From Surplus	Book Value ◇	No. of Shares	Par Value	Par Cash	From Surplus	Book Value	Common Stock No. of Shares	Common Stock Book Value	Preferred Stock No. of Shares	Preferred Stock Book Value			
Dec. 31, 1913	After the Sale of the Western Electric Company, Incorporated of Illinois to the Western Electric Company of New York the Capital Structure was - -	150,000	No Par	$ -	$ (Y)	$ (Y)	150,000	100	$ 4,250,000	$ 8,750,000	$ 13,000,000	150,000	$68,239,682	150,000	$13,000,000	$ (Y)	$ 40,239,682	1
Dec. 31, 1914												150,000	68,688,648	150,000	13,000,000	(Y)	40,688,648	2
June 30, 1917	Issued 6% Preferred Stock - - - - - - - - - - - - -						150,000	100	13,000,000		13,000,000							3
Dec. 31, 1917												150,000	83,758,364	300,000	30,000,000	(Y)	86,758,364	4
Dec. 31, 1918												150,000	88,968,688	300,000	30,000,000	(Y)	88,968,688	5
Dec. 31, 1919												150,000	87,884,894	300,000	30,000,000	(Y)	87,884,894	6
Mar. 9, 1920	Preferred Stock was retired at $120 and Common Stock as par was issued at $120 - - - - -	200,000	No Par	$1,250,000	8,750,000	10,000,000	(300,000)	(100)	(21,250,000)	(8,750,000)	(30,000,000)	-		0	0			7
	Excess of Price of Preferred Stock Retired Offset the additional Cost on Common Stock - - - - - - -				4,000,000	4,000,000				(4,000,000)	4,000,000							8
Dec. 31, 1920	Capital Structure after Changes - - - - - - - - - -	350,000	No Par	21,250,000	14,750,000	35,000,000	0	-	0	0	0	350,000	87,343,138(Y)	0	0	(Y)	87,343,138	9
Dec. 31, 1921												350,000	86,773,438			(Y)	86,773,438	10
Apr. to Sept. 1922	Preferred Stock was Issued for Redemption of 7% Bonds - (I)						344,794	100		34,479,400	34,479,400							11
Dec. 30, 1922	Issued for Funds to Redeem Outstanding 5% Mortgage Bonds - - - - - - - - - - - - - - - - - -	150,000	No Par	15,000,000		15,000,000												12
Dec. 31, 1922												500,000	76,931,838	344,794	34,479,400	(Y)	99,411,438	13
Dec. 31, 1923												500,000	87,123,787	344,794	34,479,400	(Y)	101,603,387	14
Dec. 31, 1924												500,000	90,888,128	344,794	34,479,400	(Y)	105,368,728	15
Sept.15, 1925	7% Preferred Stock was Retired- - - - - - - - - (I)						(344,794)			(34,479,400)				0	0			16
Sept.30, 1925	Capitalization of the Company was Changed as Stated in Note Y Resulting in an Adjustment of Surplus Amounting to- - - - - - - - - - - - - - - - - -				1,800,000	1,800,000												17
	Stock Dividend Issued Without Changing Capitalization- - - - - - - - - - - - - - - - - -	600,000	No Par		(Note Y)							0						18
Dec. 31, 1925	Capital Structure after Change in Capitalization- -	750,000	No Par	$4,250,000	15,550,000	20,000,000	0		0	0	0	750,000	88,000,000(Y)	0	0	48,994,648	101,434,886	19
Dec. 31, 1926												750,000	88,000,000	0	0	88,000,681	100,000,681	20
May 25, 1927	Common Stock was Split 5 Shares for One - - - - -	3,750,000	No Par	0	0	0												21
Dec. 31, 1927	Capital Structure after Split-up and Transfer of Surplus - - - - - - - - - - - - - - - - - - -				20,000,000	20,000,000						3,750,000	70,000,000	0	0	12,907,786	87,907,786	22
Dec. 31, 1928	Common Stock Issued as par at $40 Per Share (Ratio 1 to 10) - - - - - - - - - - - - - - - - -	250,000		10,000,000		10,000,000												23
	Also Transfer of Surplus - - - - - - - - - - - - - -				15,000,000	15,000,000						4,000,000	180,000,000	0	0	10,788,986	118,788,986	24
May 31, 1929	Common Stock Issued as par at $40 Per Share (Ratio 1 to 8)- - - - - - - - - - - - - - - - - -	500,000		20,000,000		20,000,000												25
Dec. 9, 1929	Common Stock Issued as par at $40 Per Share (Ratio 1 to 6)- - - - - - - - - - - - - - - - - -	750,000		30,000,000		30,000,000												26
Dec. 31, 1929												5,250,000	150,000,000	0	0	14,888,948	164,888,948	27
Mar. 31, 1930	Common Stock Issued as par at $60 Per Share (Ratio 1 to 9)- - - - - - - - - - - - - - - - - -	750,000		30,000,000		30,000,000												28
Dec. 31, 1930	Capital Structure at December 31, 1930- - - - - -	6,000,000		120,000,000	30,750,000	150,000,000						6,000,000	180,000,000	0	0	6,981,784	186,981,784	29

9 Surplus in these years was considered in value of common stock.

Y Capital structure was changed as follows:

150,000 shares preferred par $100 - $15,000,000
150,000 shares common " par - 53,239,682
Valued as follows:

Surplus December 31, 1914 -	$54,011,619
Dividends paid 1915 -	1,600,000
	52,401,919
Earnings 1915 -	3,837,119
Value of common stock and surplus 1915- - - - - - - - - - - - - - - - - -	56,239,038

Y Capital structure was changed as follows:

Common stock and surplus 1919 -		87,884,894
300,000 shares issued at $100 amounted to - - - - - - - - -	($30,000,000)	
Premium paid on preferred stock retired - - - - - - - - - -	(6,000,000)	
Premium on 9 shares sold at $190 per share - - - - - - - -	90	
Earnings for 1920 -	824,756	
		82,824,846
		170,709,740

I From April to September 1922, 344,794 shares of 7% preferred stock were issued in conversion of bonds at $100 per share - - - - - - - - - - - - - - - 34,479,400
These shares were retired on September 15, 1925 at $110 per share - - - - - 37,947,340
Balance charged to surplus- 3,467,940

Issued

Y On September 30, 1925 the Board of Directors authorized the change in the capital of the Company to be $88,000,000 represented by 800,000 shares of common stock no par value and further deemed it advisable that said capital shall be represented by 750,000 shares of common stock no par and declared a stock dividend of 600,000 shares. The statement representing the Company's capital was changed so as to state that such capital shall be at least equal to the sum of the aggregate par value of all issued shares having par value plus $5.00 in respect to every issued share without par. The revaluation was determined as follows:

Value of common stock and surplus at December 31, 1924 -	$80,888,128
Represented by 600,000 shares was valued as follows:	
Earnings for Year 1925 -	7,484,888
Premium Paid on 7% Preferred Stock Retired -	(3,437,840)
Special Dividend Received from International Western Electric Company, Incorporated- -	9,700,000
Profit from Sale of International Western Electric Company, Incorporated - - - - - - - - -	4,888,888
Total Capital and Surplus at December 31, 1925 -	101,434,886
Stated Capital as set up per Board of Directors- (*)	88,888,888
Balance in Surplus Account at December 31, 1925- -	12,888,888

* Stated capital represented the following:

800,000 shares of common stock at $5.00 per share- -	8,888,888
250,000 shares of preferred stock at $120 per share -	30,000,000
	38,888,888

WESTERN ELECTRIC COMPANY, INCORPORATED
STATEMENT OF SURPLUS AND UNDIVIDED EARNINGS FOR YEARS 1916 TO 1930

a	b	c	d	e	f	g	h	
Year Ending Dec. 31st	Total Earnings	Interest Paid on Bonds, Borrowings and Bond Discount	Dividends Paid: Common Stock	Dividends Paid: Preferred Stock	Balance Carried to Common Stock and Surplus (b - (c to e))	Adjustments to Capital Stock and Surplus (Analysed on Attached Statement)	Capital and Surplus at End of Each Year (A)	
1915 - - - - -	$	$	$	$	$	$	$25,229,032	1
1916 - - - - -	3,204,710	880,094	1,200,000	900,000	224,616	0	25,453,648	2
1917 - - - - -	4,161,560	1,309,844	1,200,000	1,350,000	301,716	0	25,755,364	3
1918 - - - - -	5,050,849	1,540,528	1,500,000	1,800,000	210,321	0	25,965,585	4
1919 - - - - -	5,6[illegible]2,089	1,263,180	1,500,000	1,800,000	1,088,909	0	7,054,594	5
1920 - - - - -	[illegible],277,414	4,037,645	3,000,000	345,000	894,769	30,000,090(B)	57,949,453	6
1921 - - - - -	1[illegible],166,337	5,842,340	3,500,000	0	823,997	0	58,773,450	7
1922 - - - - -	9,235,890	3,904,097	3,500,000	686,857	1,144,936	15,013,438(C)	74,931,8[illegible]6	8
1923 - - - - -	10,079,471	1,159,958	5,000,000	1,727,572	2,191,941	0	77,1[illegible]3,767	9
1924 - - - - -	14,505,[illegible]57	4,378,927	5,000,000	1,727,572	3,399,358	0	80,523,125	10
1925 - - - - -	16,073,981	1,780,679	5,625,000	1,253,980	7,424,322	(39,012,464)(E)	48,934,583	11
1926 - - - - -	16,431,933	1,867,895	7,500,000	0	7,074,038	0	56,008,6[illegible]1	12
1927 - - - - -	19,339,174	1,982,757	7,500,000	0	9,856,417	(52,877,252)(E)	12,987,786	13
1928 - - - - -	22,023,282	2,315,393	11,250,000	0	8,457,889	(10,661,721)(F)	10,783,954	14
1929 - - - - -	31,555,774	4,560,526	23,500,000	0	3,495,246	277,745(G)	14,556,945	15
1930 - - - - -	20,297,612	4,67[illegible],773	23,250,000	0	(7,625,161)	0(H)	6,931,784	16
Grand Total	196,055,933	41,496,636	104,025,000	11,570,981	38,963,314	(57,260,564)		17

A For the Years 1916 to 1924 Inclusive, Capital and Surplus was stated as the book value of Outstanding Capital Stock. In 1925 Surplus Account was set up.

B Represents:	
200,000 shares of Common Stock issued at $180 per share	$36,000,000
Less: Premium paid on the Redemption of 300,000 shares of Preferred Stock par $100 at $120 per share	6,000,000
	30,000,000
Plus: Premium of $10 a share on 9 shares of Common Stock not subscribed to and sold to American Telephone and Telegraph Company at $190	90
Net adjustment 1920	30,000,090
C Represents:	
150,000 shares of Common Stock Issued at $100 per share	15,000,000
Premium on Sale of 1,413 shares of Preferred Stock	13,438
Net adjustment 1922	15,013,438
D Represents:	
Special Dividend received from International Western Electric Company, Incorporated	9,700,000
Profit resulting from Sale of International Western Electric Company, Incorporated	6,255,096
	15,955,096
Less: Premium paid of $10 per share on Redemption of 246,796 shares of Preferred Stock	2,467,960
Stated Capital set up per Board of Directors	52,500,000
	54,967,960
Net adjustment 1925	39,012,864
E Represents:	
Reserve for Contingencies transferred to Surplus	6,824,710
Reserve against Bell Laboratories Notes transferred to Surplus	1,056,302
Adjustment for International Standard Electric Corporation Pension Reserve transferred to Surplus	330,154
Adjustment for Graybar Electric Company, Inc. Pension Reserve transferred to Surplus	373,152
Receipt of Special Dividend for Electrical Research Products Inc.	48,750,000
	57,334,318
Less: Revaluation of the holdings in Electrical Research Products Inc.	38,811,570
Distribution of Special Dividend received from Electrical Research Products Inc. - Rate of $13.00 a share	48,750,000
Special Surplus Adjustment	150,000
Transfer of Surplus to Common Stock	22,500,000
	110,211,570
Net adjustment 1927	52,877,252
F Represents:	
Final adjustment to Graybar Pension Fund	325,831
Adjustment for Electrical Research Products Inc. Pension Fund	12,448
Revaluation of holdings in Electrical Research Products Inc.	4,000,000
Funds received from the issue of 250,000 shares of Common Stock at $40 per share	10,000,000
	14,338,279
Less: Transfer of Surplus to Common Stock	25,000,000
Net adjustment 1928	10,661,721

eproents:

Final adjustment of International Western Electric Company, Incorperated Pension Fund	$ 277,748
Funds Received from the issue of 500,000 Common Stock at $40 per share	30,000,000
Funds Received from the issue of 750,000 shares Common Stock at $40 per share	30,000,000
	50,277,748
Less: Transfer of Funds received for issues of Common Stock	50,000,000
Net adjustment 1929	277,748

H There wae an in and out transfer of Surplus for the issue of 750,000 shares of Common Stock at $40 per share amounting to $30,000,000.

March 23, 1931.

EXHIBIT A-241 A-241 STATEMENT D

INDIANA BELL TELEPHONE COMPANY

Indianapolis INDIANA EXCHANGE

	Appraisal		Percent Av. Nov 1922	Current Cost November 1922		
	5 Yr. Ave. R.C.N.	1916-1920 Pres. Cond.	5 Yr. Av. 1916-1920	Cost of Reproduction	Condition Percent	Present Condition
A - LAND						
A-1 Acct. 207	231103.06	131103.06		154,576.24	100	154,576.24
A-2 " 211	159436.00	159436.00	100.00	159,436.00	100	159,436.00
B - DISTRIBUTION SYSTEM						
B-1 Acct. 241	1078908.07	812445.67	135.44	1,461,273.09	75+	1,100,376.42
B-2 " 242	1984440.81	1588012.96	112.81	2,238,647.68	80+	1,791,437.42
B-3 " 243	532259.18	373346.57	116.78	621,572.27	70+	435,994.12
B-4 " 244	931085.56	837977.01	123.37	1,148,680.26	90	1,033,812.24
B-5 " 245	2014198.33	1812778.50	111.45	2,244,824.04	90	2,020,341.64
B-6 " 231	658222.52	591537.52	126.02	829,492.02	90-	745,455.58
B-7 " 232	197933.15	177981.30	140.62	278,333.60	90-	250,277.30
B-8 " 233	14261.02	9982.71	96.87	13,814.65	70	9670.25
B-9 " 234	348875.16	319346.18	137.93	481,203.51	91+	440,474.19
B-10 " 235	14678.28	13210.46	142.89	20,973.79	90	18,876.43
C - EXCHANGE BLDG.						
C-1 Acct. 212	876537.00	728835.45	100.00	876,537.00	83+	728,835.45
D - CENTRAL OFFICE EQUIPMENT						
D-1 Acct. 221	2715215.78	2474454.81	134.57	3,653,865.88	91+	3,329,873.8[illegible]
D-2 " 222	84169.81	75735.81	107.49	90,474.13	90-	81,408.42
Sub Total	11741323.73	10106184.01	121.57	14,273,704.16		12,300,845.54
Overheads -	3103143.19	2670988.14	121.57	3,772,491.18		3,247,120.28
E - GENERAL EQUIPMENT						
E-1 Acct. 261	65538.43	58984.59	95.30	62,458.12	90	56,212.31
E-2 " 262	1064.26	851.41	124.96	1329.90	80	1063.92
E-3 " 263	383.51	287.63	104.63	401.27	75	300.95
E-4 " 264	56515.45	48038.13	68.04	38,453.11	85	32,685.14
E-5 " 265	25182.15	21404.23	124.96	31,467.61	85	26,747.48
Material and Supplies	215523.73	215523.73	100.00	215,523.73	100	215,523.73
Total	15208674.45	13122262.47		18,395,829.08		15,880,499.35
Net Additions From 1/1/21 To 10/31/22				1,420,043.31		1,715,109.65
Total Plant				19,815,872.39		17,595,609.00

3395

3112J

EXHIBIT A-242

STATEMENT E

INDIANA BELL TELEPHONE COMPANY

Indianapolis INDIANA EXCHANGE

	Appraisal		Percent Av. 1913-1922	Average Cost 1913 [redacted]-1922		
	5 Yr. Ave. R.C.N.	1916-1920 Pres. Cond.	5 Yr. Av. 1916-1920	Cost of Reproduction	Condition Percent	Present Condition
A - LAND						
A-1 Acct. 207	131103.06	131103.06	[redacted]	121,387.99	100	121,387.99
A-2 " 211	159436.00	159436.00	100.00	159,436.00	100	159,436.00
B - DISTRIBUTION SYSTEM						
B-1 Acct. 241	1078908.07	812445.67	95.17	1,026,796.81	75+	773,204.54
B-2 " 242	1984440.81	1588012.96	90.72	1,800,284.70	80+	1,440,645.36
B-3 " 243	532259.18	373346.57	92.75	493,670.39	70+	346,278.94
B-4 " 244	931085.56	837977.01	96.07	894,493.90	90	805,044.51
B-5 " 245	2014198.33	1812778.50	91.42	1,841,380.11	90	1,657,242.10
B-6 " 231	658222.52	591537.52	102.95	677,640.03	90-	608,987.88
B-7 " 232	197933.15	177981.30	88.75	175,665.67	90-	157,958.40
B-8 " 233	14261.02	9982.71	89.57	12,773.60	70	8941.51
B-9 " 234	348875.16	319346.18	96.26	335,827.23	91+	307,402.63
B-10 " 235	14678.28	13210.46	99.83	14,653.33	90	13,188.00
C - EXCHANGE BLDG.						
C-1 Acct. 212	876537.00	728835.45	100.00	876,537.00	83+	728,835.45
D - CENTRAL OFFICE EQUIPMENT						
D-1 Acct. 221	2715215.78	2474454.81	94.46	2,564,792.83	91+	2,337,370.01
D-2 " 222	84169.81	75735.81	94.08	79,186.96	90-	71,252.25
Sub Total	11741323.73	10106184.01	94.32	11,074,526.60		9,537,175.57
Overheads	3103143.19	2670988.14	94.32	2,926,884.66		2,519,276.01
E - GENERAL EQUIPMENT						
E-1 Acct. 261	65538.43	58984.59	84.57	55,425.85	90	49,883.27
E-2 " 262	1064.26	851.41	85.15 [redacted]	906.22	80	724.98
E-3 " 263	383.31	287.63	82.39	315.97	75	236.98
E-4 " 264	56515.48	48538.13	99.82	56,413.72	85	47,951.66
E-5 " 265	25182.15	21404.83	85.15 [redacted]	21,442.60	85	18,226.21
Material and Supplies	215523.73	215523.73	100.00	215,523.73	100	215,523.73
Total	15208674.45	13122262.47		14,351,439.35		12,388,998.41
Net Additions From 1/1/19 To 7/31/23				1,837,288.53		2,178,176.20
Total Plant				16,188,727.88		14,567,174.61

Net additions
From Nov 1-[illegible] 7/31-23.
Total Plant

3396

[fol. 3397] EXHIBIT A-243

Illinois Bell Telephone Company

Chicago Exchange

Comparison Between "Company Experience" and Plaintiff's Exhibit No. 1
1921-1923

J. G. Wray Exhibit X-6, Page 1, Corrected for Errors in Material Cost Trend

	Total Gross Additions June 30, 1923, Level		% of Appraisal Method	
	Appraisal Method	"Company Experience"	Corrected for Mat'l Cost Trend Errors	J. G. Wray Exhibit X-6 Page 1
	Year 1921			
Account 241—Exchange Pole Lines	$81,843	$74,478	91.00	90.63
Account 242—Exchange Aerial Cable	101,883	92,330	90.62	88.43
Account 245—Exchange Underground Cable	700,338	676,786	96.64	94.92
Total	$884,064	$843,594	95.42	93.77
	Year 1922			
Account 241—Exchange Pole Lines	$220,997	$207,316	93.81	92.38
Account 242—Exchange Aerial Cable	284,925	274,390	96.30	94.65
Account 245—Exchange Underground Cable	1,594,642	1,552,313	97.35	95.82
Total	$2,100,564	$2,034,019	96.83	95.30
	Jan.-June 1923			
Account 241—Exchange Pole Lines	$121,143	$123,483	101.93	98.30
Account 242—Exchange Aerial Cable	194,054	192,132	99.01	96.73
Account 245—Exchange Underground Cable	1,007,139	996,892	98.98	100.21
Total	$1,322,336	$1,312,507	99.26	99.52
Total	$4,306,964	$4,190,120	97.28	96.28

(Here follows Exhibit A-244, side folio 3398)

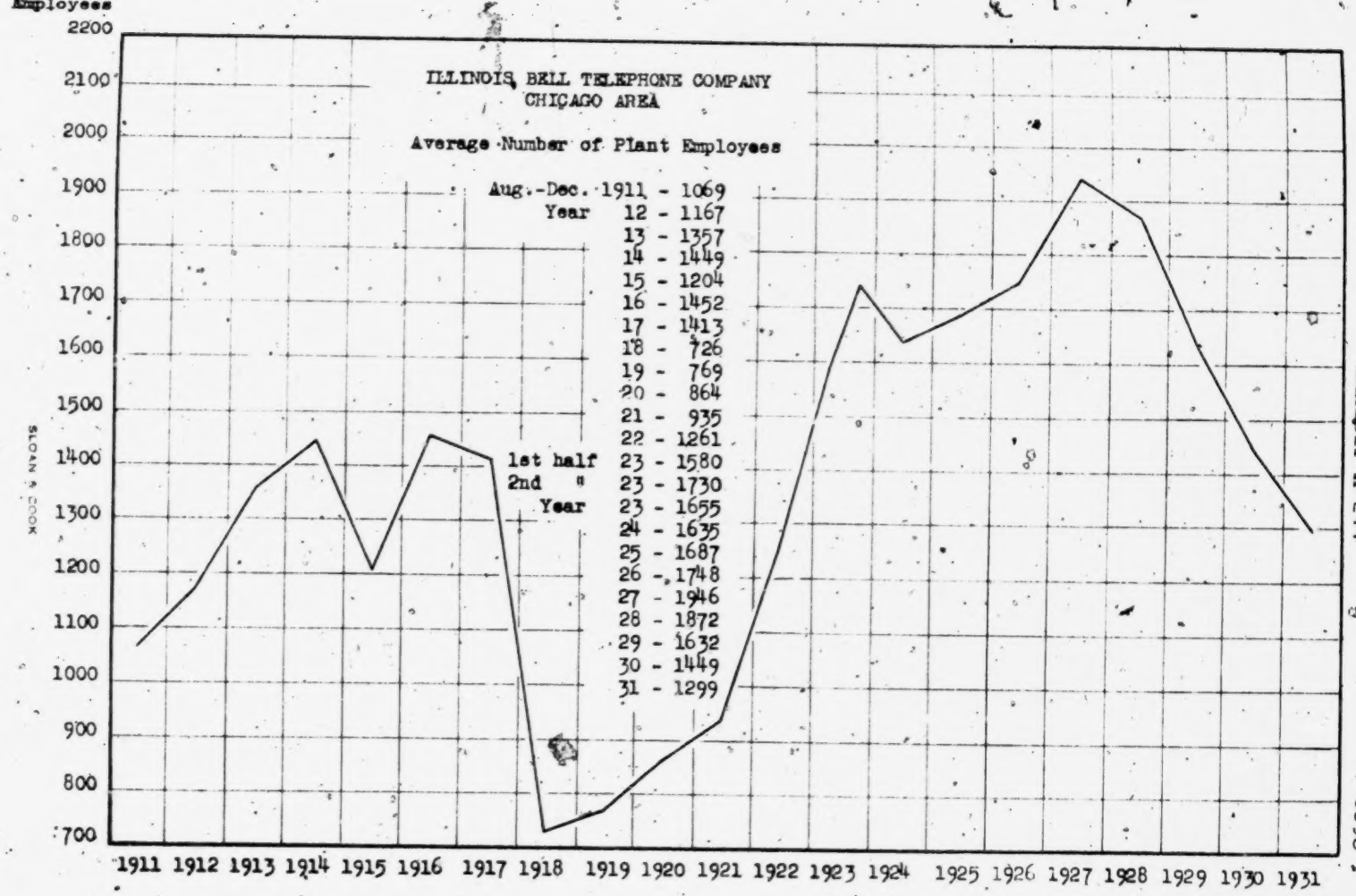


EXHIBIT A-244

3398

[fol. 3399]

EXHIBIT A-245

Comparison of Labor Cost Trends as Determined from Productive Hourly Rates and as Used in Appraisals (Based on Average Wage Rates)

Account	Prod. Hourly Rate 1st 6 Mo. 1923 at 6/30/23 Level*	Plant Sup. & Tool Exp. at 8.3%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1929	Plant Sup. & Tool Exp. at 13.15%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1929 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines.....	$.9079	$.0754	$.1387	$1.1220	$1.1630	$.1529	$.2011	$1.5170	35.20	12.47
242 Exch. Aerial Cable....	.7737	.0642	.0466	.8845	1.0882	.1431	.0662	1.2975	46.69	28.41
245 (5C) Exch. U. G. Cable	.7631	.0633	.0395	.8659	1.0882	.1431	.0438	1.2751	47.26	36.22
245 (35C) Exch. Bldg. Cable	.9298	.0772	.0092	1.0162	1.1662	.1534	.0102	1.3298	30.86	30.81
245 (5C and 35C) Total Exch. U. G. Cable.	.8315	.0690	.0274	.9279	1.1247	.1479	.0220	1.2946	39.52	35.01

	Prod. Hourly Rate 1st 6 Mo. 1923 at 6/30/23 Level*	Plant Sup. & Tool Exp. at 8.3%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1931	Plant Sup. & Tool Exp. at 12.50%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1931 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines.....	$.9079	$.0754	$.1387	$1.1220	$1.3534	$.1692	$.1936	$1.7162	52.96	15.79
242 Exch. Aerial Cable....	.7737	.0642	.0466	.8845	1.3278	.1660	.0683	1.5021	76.61	33.17
245 (5C) Exch. U. G. Cable.	.7631	.0633	.0395	.8659	1.3265	.1658	.0438	1.5361	77.40	41.37
245 (35C) Exch. Bldg. Cable	.9298	.0772	.0092	1.0162	1.3964	.1746	.0084	1.5794	55.42	36.20
245 (5C and 35C) Total Exch. U. G. Cable..	.8315	.0690	.0274	.9279	1.3612	.1702	.0261	1.5575	67.85	40.17

* As determined by J. G. Wray & Co.

EXHIBIT A-245—Continued

[fol. 3400]

Comparison of Labor Cost Trends as Determined from Productive Hourly Rates and as Used in Appraisals (Based on Average Wage Rates)

Account	Average Prod. Hourly Rate Year 1929	Plant Sup. & Tool Exp. at 13.15%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1931	Plant Sup. & Tool Exp. at 12.50%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1931 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines	$1.1630	$.1529	$.2011	$1.5170	$1.3534	$.1692	$.1936	$1.7162	13.13	3.0
242 Exch. Aerial Cable	1.0882	.1431	.0662	1.2975	1.3278	.1660	.0683	1.5621	20.39	3.8
245 (5C) Exch. U. G. Cable	1.0882	.1431	.0438	1.2751	1.3265	.1658	.0438	1.5361	20.47	3.8
245 (35C) Exch. Bldg. Cable	1.1662	.1534	.0102	1.3298	1.3964	.1746	.0084	1.5794	18.77	4.2
245 (5C and 35C) Total Exch. U. G. Cable	1.1247	.1479	.0220	1.2946	1.3612	.1702	.0261	1.5575	20.31	3.8

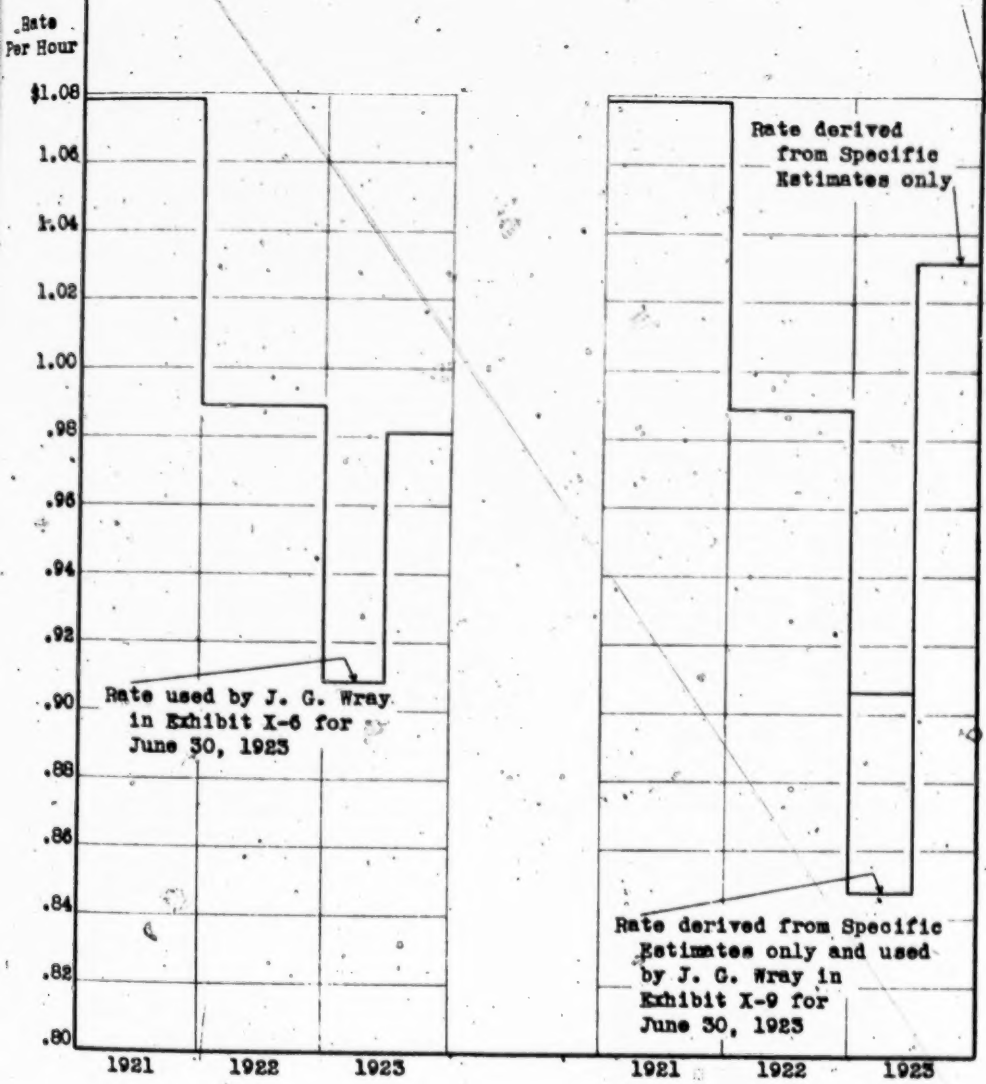
(Here follows Exhibit A-246, side folio 3401)

EXHIBIT A-246

3401

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

Productive Hourly Rates for Exchange Pole Line Labor as derived from analysis of Specific and Routine Estimates.



SLOAN & COOK

[fol. 3402]

EXHIBIT A-247

Illinois Bell Telephone Company

Chicago Exchange

Index of Labor Costs

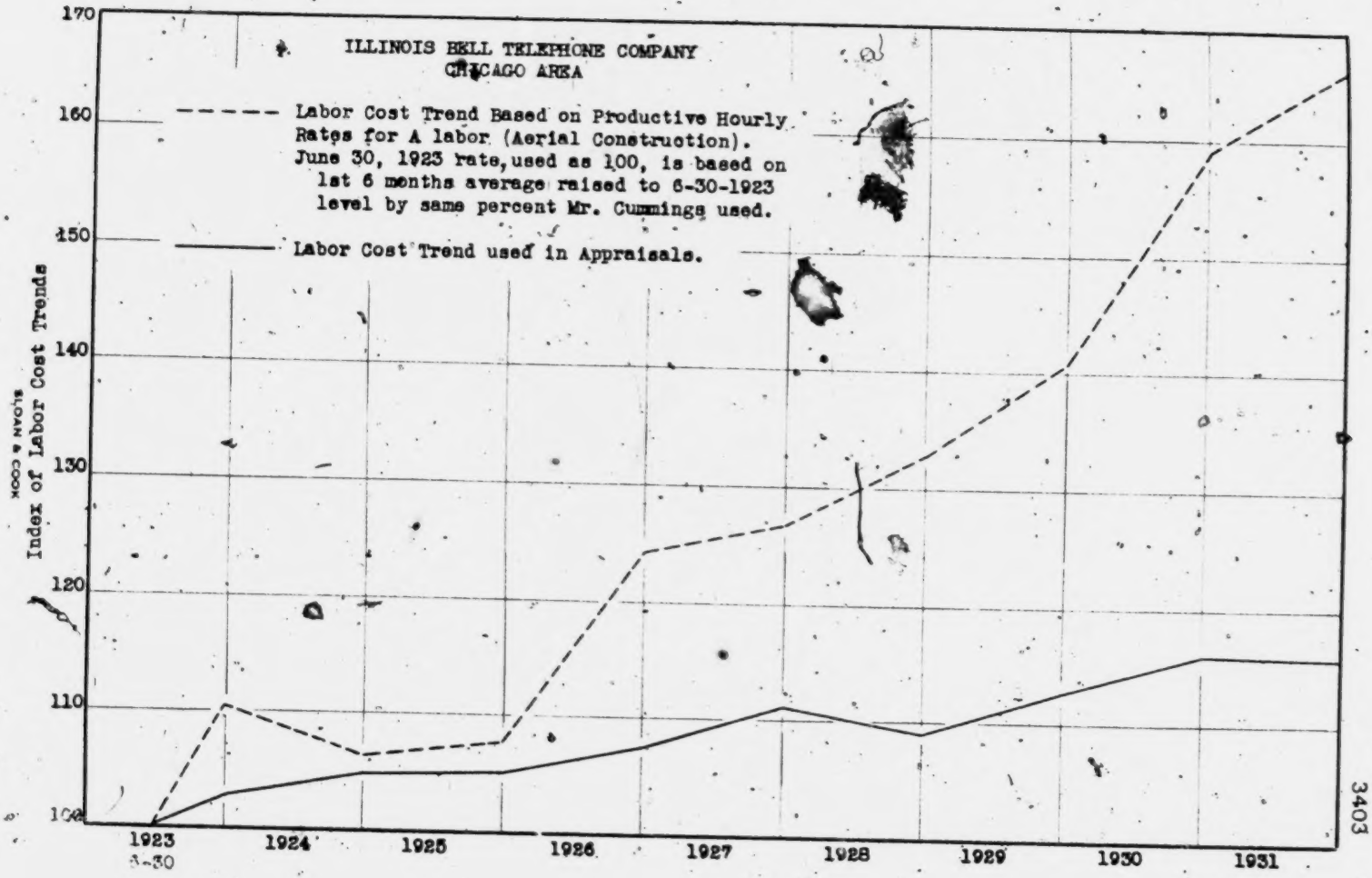
Aerial Construction Gang

	Based on Trends Used in Exhibits A-2 to A-10	Based on Productive Hourly Rate for Class A Labor
6-30-1923	100.0	100.0
12-31-1923	102.7	110.5
12-31-1924	104.7	106.1
12-31-1925	105.0	107.6
12-31-1926	107.2	124.1
12-31-1927	110.9	126.6
12-31-1928	109.0	132.7
12-31-1929	112.5	141.0
12-31-1930	115.8	149.1
12-31-1931	115.8	166.4

Above indexes indicate what $100 of labor as of June 30, 1923 would cost at each succeeding Dec. 31 when converted by each of the two methods shown.

June 30, 1923 rate, used as 100, is the productive hourly rate for first six months of 1923 increased to June 30, 1923 level in same manner as used by J. G. Wray & Company.

(Here follow charts, side folios 3403 and 3404)


ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
Labor Cost Trend Based on Productive Hourly Rates for A labor (Aerial Construction). June 30, 1923 rate, used as 100, is based on 1st 6 months average raised to 6-30-1923 level by same percent Mr. Cummings used.
Labor Cost Trend used in Appraisals.
Index of Labor Cost Trends
170
160
150
140
130
120
110
100
1923
6-30
1924
1925
1926
1927
1928
1929
1930
1931

3403

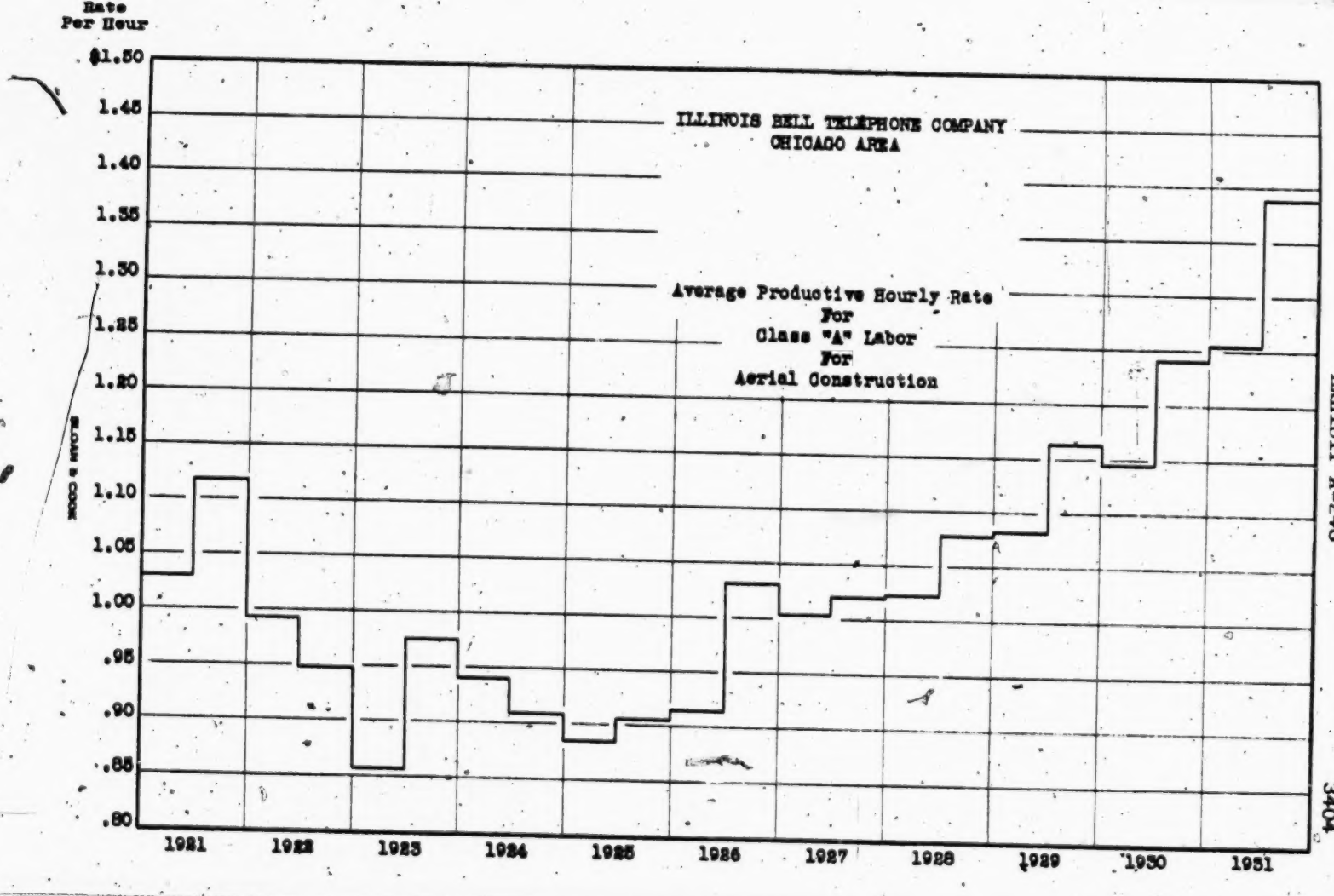


EXHIBIT A-248

3404

[fol. 3405]

EXHIBIT A-249

Illinois Bell Telephone Company

Chicago Exchange

Comparison Between "Company Experience" and Plaintiff's Exhibit No. 1, 1921-1923

J. G. Wray Exhibit X-6, Page 1, Corrected for Errors in Material Cost Trend and Productive Hourly Rate

	Total Gross Additions June 30, 1923, Level		% of Appraisal Method	
	Appraisal Method	"Company Experience"	As Corrected	J. G. Wray Exhibit X-6 Page 1
	Year 1921			
Account 241—Exchange Pole Lines	$81,843	$75,976	92.83	90.63
Account 242—Exchange Aerial Cable	101,883	92,984	91.27	88.43
Account 245—Exchange Underground Cable	700,338	679,553	97.03	94.92
Total	$884,064	$848,513	95.98	93.77
	Year 1922			
Account 241—Exchange Pole Lines	$220,997	$211,732	95.81	92.38
Account 242—Exchange Aerial Cable	284,925	276,892	97.18	94.65
Account 245—Exchange Underground Cable	1,594,642	1,558,251	97.72	95.82
Total	$2,100,564	$2,046,875	97.44	95.30
	Jan.-June 1923			
Account 241—Exchange Pole Lines	$121,143	$125,539	103.63	98.30
Account 242—Exchange Aerial Cable	194,054	193,293	99.61	96.73
Account 245—Exchange Underground Cable	1,007,139	1,000,538	99.34	100.21
Total	$1,322,336	$1,319,370	99.78	99.52
Total	$4,306,964	$4,214,758	97.86	96.28

[fol. 3406]

EXHIBIT A-250

Illinois Bell Telephone Company,

Chicago Area

Apportionment of Book Costs to Specific and Routine Construction

Account		Book Cost Dec. 31, 1930	Work Done Under		Book Cost	
			Spec.	Routine	Specific	Routine
207-01	Right of Way-Exch.	$393,745	2.0	98.0	$7,875	$385,870
207-02	" " " -Toll	784	2.0	98.0	16	768
		$394,529			$7,891	$386,638
221	Cent. Off. Tel. Eqpt.	57,357,857	93.5	6.5	53,629,596	3,728,261
222	Other Eqpt. of C. O.	1,653,715	32.2	67.8	532,496	1,121,219
		$59,011,572			$54,162,092	$4,849,480
231	Station Apparatus	17,037,912	4.0	96.0	681,516	16,356,396
232	" Installations	9,305,545	1.1	98.9	102,361	9,203,184
233	Interior Block Wires	164,057	....	100.0	....	164,057
234	Prvt. Br. Exchanges	10,949,197	33.9	66.1	3,711,778	7,237,419
235	Booths & Spl. Fittings	1,066,528	.1	99.9	1,067	1,065,461
		$38,523,239			$4,496,722	$34,026,517

241	Exch. Pole Lines	3,201,481	9.5	90.5	304,141	2,897,340
232	" Aerial Cable	5,969,274	17.9	82.1	1,068,500	4,900,774
243	" " Wire	3,870,616	....	100.0	.....	3,870,616
244	" U.G. Conduit	17,303,744	79.5	20.5	13,756,476	3,547,268
245	" " Cable	35,862,308	68.7	31.3	24,637,467	11,224,931
246	" Subm. "	13,249	97.7	2.3	12,944	305
		$66,220,762			$39,779,528	$26,441,234
251	Toll Pole Lines	43,799	56.8	43.2	24,878	18,921
252	" Aerial Cable	23,753	95.1	4.9	22,589	1,164
253	" " Wire	71,063	57.2	42.8	40,648	30,415
254	" U.G. Conduit	517,458	96.1	3.9	497,277	20,181
255	" " Cable	4,896,819	96.1	3.9	4,705,843	190,976
256	" Subm. "	6,470	90.8	9.2	5,875	595
		$5,559,362			$5,297,110	$262,252
270	Miscellaneous	48,808	87.8	12.2	42,853	5,955
	Total	$169,758,272	61.1	38.9	$103,972,076	$65,972,076
	Total excluding all Station Eqpt.	$131,235,033	75.7	24.3	$99,289,474	$31,945,559
	Total including all Station Eqpt. under "Specific"	$169,758,272	81.2	18.8	$137,812,713	$31,945,559
	Total excluding all Station Eqpt. & Exch. Aer. Wire	$127,364,417	78.0	22.0	$99,289,474	$28,074,943
	Total including all Station Eqpt. & Exch. Aer. Wire under "Specific"	$169,758,272	83.5	16.5	$141,683,329	$28,074,943
	Total including Station Apparatus and Other Equipt. of C. O. under "Specific"	$169,758,272	71.43	28.57	$121,263,811	$48,494,461

[fol. 3407]

EXHIBIT A-251

Illinois Bell Telephone Company,

Chicago Exchange

Comparison between "Company Experience"
On Its Larger Construction Projects
and Plaintiff's Exhibit No. 1
1921-1923

J. G. Wray Exhibit X-9. Page 1, Corrected for Errors in Material Cost Trend, Productive Hourly Rate, and Specific Estimate Performance

	Total Gross Additions June 30, 1923 Level		% of Appraisal Method		
	Appraisal Method	"Company Experience"	Corrected for Mat'l and Labor	J. G. Wray Exhibit X-9 Page 1	J. G. Wray Exhibit X-9A* Page 1
	Year 1921				
Account 241—Exchange Pole Lines	$81,843	$75,575	92.34	80.09	85.18
Account 242—Exchange Aerial Cable	101,883	89,364	87.71	84.98	84.98
Account 245—Exchange Underground Cable	700,338	678,356	96.86	91.77	91.77
Total	$884,064	$843,295	95.39	89.90	90.38
	Year 1922				
Account 241—Exchange Pole Lines	$220,997	$210,563	95.28	80.79	86.42
Account 242—Exchange Aerial Cable	284,925	266,940	93.69	91.10	91.10
Account 245—Exchange Underground Cable	1,594,642	1,545,005	96.89	92.20	92.20
Total	$2,100,564	$2,022,508	96.28	90.85	91.44
	Jan.-June 1923				
Account 241—Exchange Pole Lines	$121,143	$124,755	102.98	84.96	91.31
Account 242—Exchange Aerial Cable	194,054	186,651	96.19	93.39	93.39
Account 245—Exchange Underground Cable	1,007,139	991,079	98.41	95.93	95.93
Total	$1,322,336	$1,302,485	98.50	94.55	95.13
Total	$4,306,964	$4,168,288	96.78	91.79	92.36

* Corrected Exhibit X-9.

[fol. 3408]

EXHIBIT A-252

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 11, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
	J. G. Wray Exhibit X-8 Page 11	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 11	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	1.94	.....	1.94	.....
$0— 24.99	12.62	.....	14.56	.....
25.00— 49.99	3.88	3.03	18.44	3.03
50.00 99.99	3.88	3.03	22.32	6.06
100.00— 199.99	14.56	8.08	36.88	14.14
200.00— 349.99	8.74	6.06	45.62	20.20
350.00 599.99	7.77	13.13	53.39	33.33
600.00— 999.99	9.71	13.13	63.10	46.46
1000.00—1999.99	10.68	19.19	73.78	65.65
2000.00—3999.99	16.50	23.24	90.28	88.89
4000.00—7500.00	4.86	6.06	95.14	94.95
Over 7500.00	4.86	5.05	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$1511.15	$2036.16		

* Excludes 4 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

[fol. 3409]

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 11, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(.41)	.....	(.41)	.....
$0— 24.99	.11	.....	(.30)	.....
25.00— 49.99	.10	.07	(.20)	.07
50.00— 99.99	.17	.11	(.03)	.18
100.00— 199.99	1.48	.59	1.45	.77
200.00— 349.99	1.56	.80	3.01	1.57

( )—Red.

* Excludes 4 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

Group	% of Total Charges by Groups: J. G. Wray Exhibit X-8 Page 11	% of Total Charges by Groups: Corrected to Include All Charges after Completion of Same Estimates*	Cumulative % of Total Charges by Groups: J. G. Wray Exhibit X-8 Page 11	Cumulative % of Total Charges by Groups: Corrected to Include All Charges after Completion of Same Estimates*
350.00— 599.99	2.50	3.24	5.51	4.81
600.00— 999.99	4.49	4.58	10.00	9.39
1000.00—1999.99	10.40	12.57	20.40	21.96
2000.00—3999.99	33.53	34.88	53.93	56.84
4000.00—7500.00	17.74	18.47	71.67	75.31
Over—7500.00	28.33	24.69	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$1511.15	$2036.16		

Of the total charges to these estimates when completed, only 25.12% are for estimates showing charges to this account for less than $2500 in amount.

[fol. 3410]

Illinois Bell Telephone Company, Chicago Exchange

Account 245 (5-C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 20, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups: J. G. Wray Exhibit X-8 Page 20	% of Total Estimates by Groups: Corrected to Include All Charges after Completion of Same Estimates*	Cumulative % of Total Estimates by Groups: J. G. Wray Exhibit X-8 Page 20	Cumulative % of Total Estimates by Groups: Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	2.01	.....	2.01	.....
$0— 34	6.83	.41	8.84	.41
35— 99	3.61	.92	12.45	1.23
100— 199	5.22	.82	17.67	2.05
200— 349	3.61	3.29	21.28	5.34
350— 599	6.83	4.12	28.11	9.46
600— 999	6.03	6.17	34.14	15.63
1000— 1599	7.63	7.00	41.77	22.63
1600— 2499	7.63	8.23	49.40	30.86
2500— 3999	8.03	9.47	57.43	40.33
4000— 6499	9.64	10.29	67.07	50.62
6500— 9999	7.23	11.93	74.30	62.55
10000—15999	10.84	15.23	85.14	77.78
16000—25000	10.44	13.99	95.58	91.77
Over 25000	4.42	8.23	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$7249	$12079		

* Excludes 6 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

[fol.3411] Illinois Bell Telephone Company, Chicago Exchange

Account 245 (5-C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 20, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(.07)	.....	(.07)	.....
$0— 34	.02	.....	(.05)	.....
35— 99	.04	.01	(.01)	.01
100— 199	.11	.01	.10	.02
200— 349	.17	.07	.27	.09
350— 599	.44	.17	.71	.26
600— 999	.66	.43	1.37	.69
1000— 1599	1.39	.77	2.76	1.46
1600— 2499	2.17	1.41	4.93	2.87
2500— 3999	3.49	2.50	8.42	5.37
4000— 6499	7.17	4.44	15.59	9.81
6500— 9999	7.92	7.73	23.51	17.54
10000—15999	19.71	16.26	43.22	33.80
16000—25000	28.23	22.25	71.45	56.05
Over 25000	28.55	43.95	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$7249	$12079		

( )—Red.

* Excludes 6 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed.

[fol. 3412] Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 6, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	12.91	.....	12.91	.....
$0— 99	19.35	6.90	32.26	6.90
100— 499	12.91	17.24	45.17	24.14
500—1099	19.35	13.79	64.52	37.93
1100—2499	19.35	24.14	83.87	62.07
2500—4999	9.68	20.69	93.55	82.76
Over—5000	6.45	17.24	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$1480	$2805		

* Excludes 2 estimates used by J. G. Wray which included charges adjusting in character, or charges which were later reversed ($3 and $4 respectively).

[fol. 3413]

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 6, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*
Less than— $0	(2.17)	.....	(2.17)	.....
$0— 99	.44	.15	(1.73)	.15
100— 499	2.05	1.42	.32	1.57
500—1099	10.81	4.23	11.13	5.80
1100—2499	21.17	13.69	32.30	19.49
2500—4999	22.46	22.94	54.76	42.43
Over—5000	45.24	57.57	100.00	100 00
Total	100.00	100.00		
Average cost of each estimate	$1480	$2805		

( )—Red.

* Excludes 2 estimates used by J. G. Wray which included charges adjusting in character, or charges which were later reversed ($3 and $4 respectively).

[fol. 3414] Illinois Bell Telephone Company, Chicago Exchange

Account 245 (15C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 8, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	13.01	.....	13.01	.....
$0— 19	9.76	.94	22.77	.94
20— 99	7.32	.....	30.09	.94
100— 299	9.76	5.66	39.85	6.60
300— 799	4.88	1.89	44.73	8.49
800— 1499	6.50	6.60	51.23	15.09
1500— 2999	5.69	4.72	56.92	19.81
3000— 4999	8.94	10.38	65.86	30.19
5000— 9999	6.50	12.26	72.36	42.45
10000—14999	12.20	18.87	84.56	61.32
15000—24999	11.38	23.58	95.94	84.90
5000—50000	3.25	10.38	99.19	95.28
Over 50000	.81	4.72	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$6932	$34894		

* Excludes 15 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed. J. G. Wray also lists the same estimate number twice in two different instances on this page.

[fol. 3415]

Illinois Bell Telephone Company, Chicago Exchange

Account 245 (15C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 8, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(1.61)	.....	(1.61)	.....
From $0— 19	.01	.....	(1.60)	.....
20— 99	.05	.....	(1.55)	.....
100— 299	.28	.03	(1.27)	.03
300— 799	.33	.04	(.94)	.07
800— 1499	1.01	.21	.07	.28
1500— 2999	1.93	.28	2.00	.56
3000— 4999	5.11	1.20	7.11	1.76
5000— 9999	7.26	2.51	14.37	4.27
10000—14999	21.35	6.66	35.72	10.93
15000—24999	32.25	12.99	67.97	23.92
25000—50000	16.48	10.13	84.45	34.05
Over 50000	15.55	65.95	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$6932	$34894		

Total cost of above estimates, less than $2500 in amount, constitute .49% of the total charges to all of the above estimates.

( )—Red.

* Excludes 15 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed.

[fol. 3416] EXHIBIT A-254

Some Associations Recommending Standard Cost System

National Paper Box Association.
Printing Ink Cost Bureau.
National Machine Tool Builder's Association.
National Battery Manufacturer's Association.
National Commercial Fixtures Manufacturer's Association.
The Silk Association of America.
National Electrical Manufacturer's Association.
National Association of Wire Manufacturers.

[fol. 3417]

Some Companies Using Standard Cost System

Gillette Safety Razor Company	
French Battery Company	Madison, Wisc.
American Chain Company	Bridgeport, Conn.
International Silver Company	Meriden, Conn.
Manning Bowman Company	" "
Seneca Falls Machinery Company	Seneca Falls, N. Y.
American Rolling Mills Company	Middletown, Ohio.
National Carbon Company	Cleveland, Ohio
Norton Company (Artificial Abrasives)	Worcester, Mass.

J. & P. Coats Company	Pawtucket, R. I.
Rockbestos Company (Electrical Wire and Cable)	New Haven, Conn.
E. H. Clapp Rubber Company	
Real Silk Hosiery Company	Indiana
Wait & Bond (Cigars)	Newark, N. J.
National Cash Register Company	Dayton, Ohio
U. S. Radio & Television Company	New York City
F. C. Huyck & Sons	Albany, N. Y.
Sprague Specialty Company	North Adams, Mass.
American Thread Company	New York, N. Y.
Duplan Silk Corporation	" " "
Behr-Manning Corporation	Troy, N. Y.
Stevens & Thompson Paper Company	Hoosick Falls, N. Y.
Union Bag & Paper Company	New York City
Dutchess Mfg. Company (Clothing)	Poughkeepsie, N. Y.
S. K. F. Industries (Ballbearings)	New York City
General Electric Company	Schenectady, N. Y.
Westinghouse Elec. & Mfg. Company	
U. S. Rubber Company	
Kelvinator Company (Refrigerators)	Detroit & Grand Rapids, Mich.
Stromberg-Carlson	Rochester, N. Y.
Robbins & Meyers Inc. (Electrical Eqpt.)	Springfield, Ohio
Arrow, Hart & Hageman (Electrical Devices)	Hartford, Conn.
Jeffrey Manufacturing Company (Conveying Machinery)	Columbus, Ohio
Robeson-Rochester Corporation	Rochester, N. Y.
Trumbull Elec. Mfg. Company	Connecticut
Allis-Chalmers Company (Misc. Machinery)	Milwaukee, Wisc.
Edison G. E. Appliance Company (Household Elec. Appliances)	Chicago
Belden Manufacturing Company (Elec. Wires & Cables)	"
Stewart-Warner Speedometer Corp	"
Kendall Company (Bauer & Black Div.) (Hospital Supplies)	"
Liquid Carbonic Company	"
Fairbanks-Morse Company	"
Kellogg Company	Battle Creek, Mich.
Wahl Company (Pencils, Pens and Metal Products)	Chicago
General Cable Company	Rome, N. Y.
Benjamin Elec. Mfg. Company	Des Plaines, Ill.
Curtis Lighting, Incorporated	Chicago
L. C. Smith Typewriter Company	Syracuse, N. Y.
American Electric Company	Chicago

[fol. 3418]

Maytag Washing Machine Company	Newton, Ia.
Oliver Farm Equipment Company	
Victor Adding Machine Company	
Pyle National Company (Railway Supplies)	Chicago
Kohler Company	Kohler, Wisc.
Chrysler Motor Company	
Link-Belt Company (Conveying Machinery)	Chicago
Hurley Machine Company	"
Payson Manufacturing Company	"
Mercury Manufacturing Company	"
H. W. Caldwell Co. (Mining Machinery)	"
Chain Belt Company	Milwaukee, Wisc.
Webster Manufacturing Company	Chicago
Oxford Miami Paper Company	
Westco Chippewa Pump Company	Davenport, Iowa
Frank Foundries Corporation	Moline, Ill.
Sacks-Barlow Foundry, Incorporated	Newark, N. J.
Everlastic, Incorporated	Chelsea, Mass.

Hollingsworth & Vose Company (Paper)	
American Writing Paper Company, Incorp	
Mohawk Carpet Mills, Inc	Amsterdam, N. Y.
Pequanoc Rubber Co	Butler, N. J.
Perfection Stove Co	Cleveland, Ohio
Herman Behr and Co. (Abrasives)	Brooklyn, N. Y.
Barber Greene Co	Aurora, Ill.
Bassick Company (Lubricating Systems)	Bridgeport, Conn.
Bausch & Lomb Optical Company	Rochester, N. Y.
Noe Equl Textile Mills	Reading, Pa.
Cincinnati Planer Co	Cincinnati, Ohio
J. C. Hartz Co	New Haven, Conn.
Bigelow-Sanford Carpet Co	New York City
Harris-Potter-Seyboldt Co. (Printing Presses)	Cleveland, Ohio
The Bigelow Company (Boilers)	New Haven, Conn.
American Safety Razor Corporation	New York City
Irving Pitt Mfg. Co	Kansas City, Mo.
Cincinnati Milling Machine Co. (Grinding Machines)	Cincinnati, Ohio
Motor Wheel Corporation	
Automatic Electric Co	Chicago, Ill.
Colorado Fuel and Iron Co	Pueblo, Colo.
Western Clock Co	La Salle, Ill.
Macbeth Evans Glass Co	Charleroi, Pa.
L. L. Brown Paper Co	Adams, Mass.
Lehn & Fink, Inc	Bloomfield, N. J.
Minneapolis-Moline Power Imp. Co	Minneapolis, Minn.
Gulf Oil Corp	Pittsburgh, Pa.
Pacific Clay Products	Los Angeles, Calif.
Inland Manufacturing Co	Dayton, Ohio
Singer Sewing Machine Co	
Corona Typewriter Company	
B. F. Goodrich Rubber Co	Akron, Ohio
Goodyear Tire and Rubber Co	" "
Pennsylvania Rubber Co	Jeanette, Pa.
Corduroy Tire Co	Grand Rapids, Mich.

[fol. 3419] EXHIBIT A-255

Extracts from Reports to Stockholders of the Western Electric Co., Inc., 1914, 1917, 1918 and 1919 Which Comment on Results of Foreign Business

1914:

"It will be impossible until after the close of the European war to report the effect of the war during this year upon our foreign investments. We expect, however, a loss of profits and some loss of property, on account of which we may later have to make revaluations."

1917:

"There is no return from foreign investments included in the profits of the company for 1917. As to some, information is entirely lacking, and as to others, it is incomplete. It is our belief, however, that, as a whole, a conservative

valuation of them would require no addition to reserves, the earnings of some of them being apparently sufficient to offset the possible losses of others."

1918:

"No return from foreign investments has been included in our earnings for 1918 (our information thereon being incomplete). It is believed, however, that the earnings of some of the foreign allied companies in which we are interested were sufficient to offset losses on others, so that no net loss was sustained on the whole.

"The Antwerp factory which had been in the hands of the Germans throughout the war came again under our control in November, 1918. Although the buildings were not much damaged, it is necessary to replace large amounts of machinery and material which had been taken away by the enemy. This rehabilitation is now in progress and it is expected operations will be resumed there within a few months.

For the purpose of handling our export business to the best advantage, it has been found advisable to segregate it from the domestic business directly conducted by this Company. Accordingly, a subsidiary corporation, the International Western Electric Company, Incorporated, was organized during the year and has been operating since June 1st with satisfactory results."

1919:

"No earnings from the foreign business are included this year in the above figures of your company's earnings.

The export and foreign business of your company is conducted through the International Western Electric Company, Incorporated, all of whose issued capital stock—55,000 shares of preferred having a par value of $100 per share and 100,000 shares of common without par value—is owned or controlled by your company.

The International Company owns interests in numerous affiliated companies established in England, France, Belgium, Norway, Switzerland, Austria, Hungary, Russia, Italy, Australia, South Africa, Canada, Argentine, China and Japan and operating in those and other foreign coun-

tries. Its proportion of ownership in such companies varies from 100% in some cases down to 10%.

[fol. 3420] The sales of the International Company and its principal foreign affiliated companies, excluding intercompany sales, were in 1919 approximately $32,500,000 an increase of about 33% over the previous year.

The largest foreign factories are at London, Antwerp, Paris, Montreal and Tokyo. All of these factories except that at Antwerp were actively and successfully operated throughout the war. The task of rehabilitating the Antwerp factory, taken again into our possession when the Germans evacuated the city in November, 1918, has progressed satisfactorily throughout the year in spite of many difficulties and at the end of the year it was operating at about 60% of its normal capacity. It has a large volume of business on its books and prospects of rapidly increasing productivity.

This condition is generally true of the affiliated foreign factories. Practically all of them are running at full capacity and their outlook is for continuing heavy orders for a long time to come.

The cost of restoring the Antwerp factory and of its partial operation through the year while being rehabilitated, the losses realized on certian contracts taken before the war and carried out at the higher costs of labor and material since prevailing, together with the heavy reserves provided at all the European factories to meet possible eventual losses due to the falling rate of exchange, have largely offset the 1919 profits of the International Company in other fields and on its export business.

A careful study has been made of the book value under present conditions of the International Company's investments in its foreign associated and allied companies as compared with the valuations at which they are carried on the books of the International Company. This study indicates that even if all accounts and investments in Germany, Austria, Hungary and Russia (having together a pre-war value of about $3,000,000) were taken as of no value whatsoever and if the prevailing exchange rates were applied to all current and temporary accounts receivable from other foreign countries, there would be remaining a valuation for all foreign investments of approximately $15,500,000 as

compared with the total of only $15,000,000 shown on the International Company's books.

On the latter valuation the International Company has a surplus at December 31, 1919, of $1,133,439. It has not, however, paid to your company the dividends accrued on its preferred stock, which total to December 31, 1919, $613,860, and it is proposed to defer the payment of these accrued dividends until the situation is clearer as to pre-war accounts and exchange. The current earnings of the International Company justify its paying current dividends at the rate of 7% per annum on its preferred stock, which will begin with the quarter ending March 31, 1920."

[fol. 3421] EXHIBIT A-256

Average Notes Payable of Electrical Research Products, Inc., to Western Electric Co., Inc., 1927 to 1930 Inclusive

1927	$0
1928	14,043,000
1929	32,982,000
1930	25,591,000

[fol. 3422]

EXHIBIT A-257

Earnings of the Western Electric Company on Bell Business, Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account, 1916 to 1932 Inclusive and 1923 to 1932 Inclusive (with Adjustments for Certain Items Listed on Page 2 of this Exhibit)

(Dollars in Thousands)

	Sales	Earnings	Per Cent Earnings to Sales (b÷a)	Average Investment	Per Cent Earnings to Average Investment (b÷d)	Average Investment Less Amount of Deprec. Reserve Account	Per Cent Earnings to Average Investment Less Amount of Deprec. Reserve Account (b÷f)
1916–1932	$3,258,182	$152,367	4.7	$2,498,364	6.1	$1,930,535	7.9
1923–1932	2,486,453	120,397	4.8	1,898,111	6.3	1,451,045	8.3

The purpose of this Exhibit is to show the effect on earnings of the Western Electric Company on its Bell business if certain controverted points set out on the following sheets were taken into consideration. None of these adjustments are conceded, except items 6 and 7 shown on Page 2.

[fol. 3423] Adjustments

(Dollars in Thousands)

	1916 to 1932	1923 to 1932
Earnings as shown on A194 Col. B	$145,307	$113,179
Adjustments:		
1. Effect of writing extraordinary reserve on plant off of cost value	3,147+	3,147+
2. Profit on Sale of Automatic Electric Option	3,002+	2,429+
3. Effect of Crediting to Bell Business Net —Royalties Received (Exhibit A82)	2,243+	762+
4. Effect of charging cost of patents to cost of operations	2,208−	2−
5. Effect of Sale of Eng. Dept. plant to Bell Telephone Lab	565+	565+
6. Effect of Substituting Federal Taxes paid for accruals	191+	197+
7. Adjusting 1924 overcharges of Pension Fund appropriation	120+	120+
Total Adjustments	7,060+	7,218+
Adjusted Earnings	152,367	120,397
Average Cumulative Investment as shown on A194, Col. D	2,553,073	1,952,820
Cumulative Effect of Writing off of cost values extraordinary reserve on plant—made 1924–1927 incl., aggregating $8,233,000	54,709−	54,709−
Adjusted Average Cumulative Investment	2,498,364	1,898,111
Average Cumulative Investment less Amount of Depreciation Reserve Account as shown on A194, Col. F	1,918,641	1,439,151
Cumulative Effect on Depreciation Reserve of Writing off of cost value extraordinary reserve on plant—made 1924–1927 incl., aggregating $8,233,000	11,894+	11,894+
Adjusted Average Cumulative Investment less Amount of Depreciation Reserve Account	1,930,535	1,451,045

[fol. 3424] Explanation of Adjustments

1. Effect of writing extraordinary reserve on plant off of cost value:

In the years 1924, 1925, 1926 and 1927 the Western Electric Company set up an extraordinary reserve against plant to cover the expected reduction in costs over the ten-year period from 1931 to 1940. The Company's position in this respect is that it was correct to charge this added cost in the years of great activity rather than to defer such costs to years when the activity would be considerably reduced. Also, it is the Company's position that as and when the anticipated reductions in prices are manifested during the

period from 1931 to 1940, the amount of this reserve will be deducted from the face value of the plant accounts. This exhibit reflects the effect on profits and on the average investment of the Western Electric Company of writing off from the face of the plant accounts the amount of these reserves in the years when they were made upon the books.

2. Effect of the profit on the sale of option to purchase control of Automatic Electric Company:

In 1927 the Electrical Research Products Inc. obtained $4,000,000 from the sale of an option to purchase the stock of the International Telephone Sales and Engineering Corporation which controlled the stock of the Automatic Electric Company. This exhibit gives effect to the inclusion as a part of earnings on Bell business of the proper portion of the sales price ascertained on the basis of purchases by the Western Electric Company of step-by-step equipment from the Automatic Electric Company during the period 1919 to 1932, inclusive.

3. Effect of crediting to Bell business net royalties received:

Exhibit A-82 shows the total amount of royalties received by the Western Electric Company and all of its subsidiaries less expenses applicable to such royalties. The amount of net royalties received, as shown by this statement for the period 1916 to 1931, was $2,243,000. No net royalties are included in this exhibit for 1932 as in the Company's opinion development and other expenses applicable thereto will be equal to or exceed the royalties to be received for the current year. This exhibit shows the effect of crediting the net amount of these royalties to Bell business of the Western Electric Company during this period.

4. Effect of charging cost of patents to cost of operations:

During the period 1916 to 1927 the Western Electric Company charged the cost of patents purchased to surplus. The cost of such patents was not included in the cost of sales as shown in Exhibits A-77 to A-80, inclusive. This exhibit gives effect to including the cost of such patents

as a part of the cost of sales, as has been the Company's practice since 1927 and which it considers proper for all years involved.

[fol. 3425] 5. Effect of the sale of engineering department plant of the Western Electric Company to the Bell Telephone Laboratories:

As of January 1, 1925, the plant of the Engineering Department of the Western Electric Company was sold to the Bell Telephone Laboratories. As a result of this sale, development charges to the Western Electric Company from the Bell Telephone Laboratories since January 1, 1925, were larger than would have been incurred by the Western Electric Company if the sale had not been effected, on account of depreciation charges and interest on investment. This exhibit gives effect to redueing such development costs to what they would have been had this plant not been sold to the Bell Telephone Laboratories.

6. Effect of substituting Federal taxes paid for Federal taxes accrued:

The cost of sales, as shown in Exhibits A-77 to A-80, inclusive, include in each year the accrual set up for the payment of federal taxes. This exhibit gives effect to the difference between the accruals as set up in the normal course of business and the amount which, at a later date, was actually paid to the Government for that year.

7. Adjusting the overcharge of pension fund appropriation in 1924:

In 1924 $2,000,000 was appropriated by the Western Electric Company from earnings, for pension fund. In Exhibits A-77 to A-80, inclusive, this amount was considered as chargeable entirely to Bell business and was so handled in profit reports of the Western Electric Company covering operations for the year 1924. This exhibit gives effect to the fact, as testified by Mr. Gregory, that we now believe a certain portion of this appropriation should have been assessed against the non-Bell business.

[fol. 3426] EXHIBIT A-258

Western Electric Co., Inc.

Relation of Gross Additions to Depreciation Reserve to Cost of Furniture and Fixtures at Dec. 31 of Each Year, 1916 to 1932 and Average for the Periods 1916 to 1932 and 1923 to 1932.

(Dollars in Thousands)

	Cost at Dec. 31	Gross Additions to Depreciation Reserve	% of Cost
1916	1,821	377	20.7
1917	2,242	480	21.4
1918	2,728	530	19.4
1919	2,869	299	10.4
1920	3,807	1,053	27.7
1921	4,739	1,111	23.4
1922	5,519	900	16.3
1923	6,859	1,407	20.5
1924	7,876	1,431	18.2
1925	6,613	838	12.7
1926	7,232	923	12.8
1927	7,888	978	12.4
1928	8,440	1,389	16.5
1929	11,116	3,396	30.5
1930	12,398	1,908	15.4
1931	12,472	658	5.3
1932 (4 Months x 3)	12,442	204	1.6
Average 1916 to 1932 Incl.	6,886	1,052	15.3
Average 1923 to 1932 Incl.	9,334	1,313	14.1

The testimony shows that the practice of the company is to maintain a reserve of 100%. This exhibit shows the amounts charged to cost of sales as a result of this practice related to the cost of plant at December 31 of each year 1916 to 1932 and for the periods 1916 to 1932 and 1923 to 1932.

[fol. 3427] EXHIBIT A-259

Western Electric Company, Inc.

Relation of Gross Additions to Depreciation Reserve to Cost of Small Tools at December 31st of Each Year, 1916 to 1932 and Average for the Periods 1916 to 1932 and 1923 to 1932 Inclusive

(Dollars in Thousands)

	Cost at Dec. 31	Gross Additions to Depreciation Reserve	% of Cost
1916	2,856	657	23.0
1917	3,987	1,120	28.1
1918	5,010	1,137	22.7
1919	5,893	1,130	19.2
1920	7,687	1,937	25.2
1921	9,507	1,912	20.1
1922	9,791	1,029	10.5
1923	10,979	1,346	12.3
1924	11,876	1,532	12.9
1925	11,995	1,638	13.7
1926	12,460	1,298	10.4
1927	12,681	1,435	11.3
1928	12,339	2,018	16.4
1929	14,120	4,381	31.0
1930	16,517	3,713	22.5
1931	18,293	1,832	10.0
1932 (4 Months x 3)	18,779	954	5.1
Average 1916 to 1932 Inclusive	10,869	1,710	15.7
Average 1923 to 1932 Inclusive	14,004	2,015	14.4

The testimony shows that the practice of the Company is to maintain a reserve of 100%.

This exhibit shows the amounts charged to cost of sales as a result of this practice related to the Cost of Plant at December 31, of each year 1916 to 1932 and for the periods 1916 to 1932 inclusive and 1923 to 1932, inclusive.

[fol. 3428] EXHIBIT A-260

American Telephone and Telegraph Company

High and Low Selling Prices, Earnings Per Share Per Year and Percentage of Such Earnings Upon Market Price of Stock

Years		Price	Dollars per Share Earned Annually	Percentages of Earnings Upon Market Prices of Stock	Average Percentage
1921	High	$119-1/2	$12.46	10.43	11.72
	Low	95-3/4		13.01	
1922	High	128-1/4	13.05	10.18	10.79
	Low	114-1/2		11.40	
1923	High	128-3/4	12.62	9.80	10.19-1/2
	Low	119-1/8		10.59	
1924	High	134-3/4	11.92	8.85	9.34-1/2
	Low	121-1/8		9.84	
1925	High	145	13.59	9.37	9.88-1/2
	Low	130-5/8		10.40	
1926	High	151	14.26	9.44	9.82-1/2
	Low	139-5/8		10.21	
1927	High	185-1/2	13.70	7.39	8.28-1/2
	Low	149-1/4		9.18	
1928	High	211	14.64	6.94	7.72-1/2
	Low	172		8.51	

NOTE.—Annual earnings shown above do not include undistributed profits of Western Electric Company nor dividend of $48,000,000, paid by that company in 1927.

[fol. 3429] EXHIBIT A-261

December 16, 1930.

Mr. E. Ehrlich:

In recent years the trend in modern industries has shown a marked increased in substitution of machine for manual operations, and toward the substitution of special machinery designed for a particular operation or product for standard machinery, thereby materially increasing the factor of obsolescence to be covered by depreciation rates.

During 1928, a study was made by the Plant Engineers in the Engineer of Manufacture's Department of the Western Electric Company, Incorporated, as to the proper rate of depreciation to be used on machinery. Their study covered machinery with a face value of $3,674,000, or approximately 14% of the total machinery cost. Conclusions reached are considered by the Engineers as properly applicable to the whole class of machinery. The results of their studies are shown in Appendix A, attached.

The engineers, in estimating the serviceable life of machinery, took into consideration factors for wear and tear

and obsolescence. They found that the rate of depreciation should be increased to take care of the decreased life resulting from the obsolescence factor, and recommended that the previous rate in use, of 7½%, be increased to 10% per annum. This rate of 10% on machinery is in line with the practice laid down in the Standard Accounting and Cost System for the Electrical Manufacturing Industry where the rates of 7½% to 12½% are recommended.

As a result of the above studies, the depreciation rate on machinery was changed from 7½% to 10%, effective January 1, 1928. As of December 31, 1928, the following journal entry was made on the books of the Company, adjusting the depreciation for the years 1924 to 1927 from 7½%, as depreciated on the books, to 10% per annum:

Dr. 107	Profit and Loss	$2,000,000
Cr. 117	Reserve for Depreciation of Plant	$2,000,000

At a meeting of the Board of Directors held on February 13, 1929, the following resolution was adopted:

"Whereas, there has been a material increase in the past five years in the factor of obsolescence in the machinery of the Manufacturing Department through the improvement made in methods and equipment; and

"Whereas, the depreciation charged against cost during these years was not sufficient to cover this increased obsolescence,

"Now, therefore, be it resolved, That the officers be and they are hereby authorized to set aside as depreciation reserve on plant, $2,000,000, in addition to the depreciation charged at regular rates."

The above figure of $2,000,000 was arrived at as follows:

	Total	1927	1926	1925	1924
Actual depreciation written off on machinery, computed at 7-1/2% of cost value	$6,092,295	$1,639,614	$1,521,826	$1,595,341	$1,335,514
Additional amount necessary to depreciate machinery 10% of cost value, 1/3 of line above	2,030,764	546,538	507,275	531,780	445,171

[fol. 3430] As the Federal Income Tax Returns for the years 1924 through 1927 are not finally audited, claim is

made for additional depreciation on machinery in these years aggregating $2,030,764.

J. Burgess.

STATE OF NEW YORK,
County of New York, ss:

John Burgess being duly sworn, deposes and says the above is a true and accurate copy of original memorandum prepared by deponent and delivered to Mr. E. Ehrlich on or about December 16, 1930.

John Burgess, Chief Corporation Accountant, W. E. Co., Inc.

Subscribed and sworn to before me this 16th day of June, 1932. George F. Knapp, Notary Public, New York County # 159. New York County Register's #3K72. Commission expires March 30th, 1933.

[fol. 3431] EXHIBIT A-263

Illinois Bell Telephone Company, Chicago Area

Method Used in Computing Annual Rate of Depreciation for Station Apparatus

Average overall life determined from turnover studies	18 Years
Average service life " " " "	4.5 Years
Average number of service lives (18 ÷ 4.5)	4
Average salvage obtained from reused apparatus	92%
Average salvage obtained from junked apparatus	5%

Determination of Average Salvage per Service Life

Salvage at end of First Service Life of 4.5 Years	92%
" " " " Second " " " " " "	92
" " " " Third " " " " " "	92
" " " " Fourth " " " " " "	5
Total salvage during 18 year overall life	281%
Average salvage per service life (281 ÷ 4)	70%

Computation of Annual Rate of Depreciation

Average service life (life on one place)	4.5 Years
Average salvage per service life	70%
Average loss per service life	30%
Annual rate of depreciation (30% ÷ 4.5 years)	6.7%

Investment Loss

Loss at end of each first three service lives	8%
Loss at end of overall life	95%

[fol. 3432] Example of Depreciation Accounting for Station Apparatus

(Assumed Cost of Station $10.00)

	Depreciation Reserve Entries			
	Credits	Debits	Net Credits	Balance
First Service Life				
Depreciation Accruals (6.7% of $10.00 for 4.5 Yrs.)	$3.00	.....	.....	.....
Charge to Reserve upon removal of apparatus	.....	$10.00	.....	.....
Salvage credit to Reserve upon reuse (92%)	9.20	.....	.....	.....
	$12.20	$10.00	$2.20	$2.20
Second Service Life				
Depreciation Accruals	$3.00	.....	.....	.....
Charge to Reserve	.....	$10.00	.....	.....
Salvage credit to Reserve	9.20	.....	.....	.....
	$12.20	$10.00	$2.20	$4.40
Third Service Life				
Depreciaion Accruals	$3.00	.....	.....	.....
Charge to Reserve	.....	$10.00	.....	.....
Salvage credits to Reserve	9.20	.....	.....	.....
	$12.20	$10.00	$2.20	$6.60
Fourth Service Life				
Depreciation Accruals	$3.00	.....	.....	.....
Charge to Reserve	.....	$10.00	.....	.....
Salvage credit to Reserve (junk at 5%)	.50	.....	.....	.....
	$3.50	$10.00	$6.50	$.10

[fol. 3433] EXHIBIT A-264

Illinois Bell Telephone Company, Chicago Area

Central Office Telephone Equipment

Actual Net Salvage from Retired Offices and Estimated Net Salvage for Surviving Offices Compared With 1919 Average Net Salvage Estimate

Offices in Service Jan. 1, 1919	Est. Average Net Salvage of Offices in Service 1-1-1919 (Used in 1919 Depr. Rates)	Jan. 1, 1919 Offices Retired to Jan. 1, 1932		Offices Surviving Jan. 1, 1932 which were Included in 1919 Est. Av. Net Salvage of 20%	
		Year of Retirement	Net Salvage % Realized	Est. Year of Retirement	Estimated Net Salv. %
Austin	.....	.....	.....	1937	.....
Belmont	.....	.....	.....	1938	.....
Beverly	.....	.....	.....	1940	.....
Calumet	.....	.....	.....	1933	.....
Canal	.....	.....	.....	1932	.....
Central	.....	1923	28.4%	.....	.....
Chesterfield	.....	1930	3.0	.....	.....

Offices in Service Jan. 1, 1919	Est. Average Net Salvage of Offices in Service 1-1-1919 (Used in 1919 Dept. Rates)	Jan. 1, 1919 Offices Retired to Jan. 1, 1932		Offices Surviving Jan. 1, 1932 which were Included in 1919 Est. Av. Net Salvage of 20%	
		Year of Retirement	Net Salvage % Realized	Est. Year of Retirement	Estimated Net Salv. %
Delaware		1931	5.3		
Douglas				1937	
Edgewater				1940	
Humboldt				1933	
Hyde Park				1934	
Irving				1942	
Kedzie				1936	
Kildare				1943	
Lafayette				1936	
Lakeview				1935	
Lawndale				1936	
Lincoln				1933	
Main		1928	11.7		
Monroe				1932	
Morrell Park				1940	
Oakland				1937	
Prospect				1939	
Pullman				1939	
Randolph		1928	4.8		
Rogers Park				1935	
So. Chicago				1938	
Stewart				1941	
Tandem		1931	1.0		
Tolt		1929	22.4		
Wabash		1929	7.5		
Wentworth				1934	
West				1932	
Yards				1934	
Average Net Salvage	20%		13.6%		10.4%

(Here follows Exhibit A-265, side folio 3434)

[fol. 3434]

EXHIBIT A-265

Comparison of Depreciation Rates, City of New York and City of Chicago

Individual Class Rates for Each City Applied to Chicago Investment at End of Each Year

Class of Plant	1929					1930					1931				
	Chicago Investment	New York City		Chicago		Chicago Investment	New York City		Chicago		Chicago Investment	New York City		Chicago	
		Rate	Amount	Rate	Amount		Rate	Amount	Rate	Amount		Rate	Amount	Rate	Amount
Buildings	$13,344,977	2.8	$373,659	2.7	$360,314	$14,721,615	2.8	$412,205	2.8	$412,205	$14,699,599	2.7	$396,889	2.7	$396,889
Manual Central Office Tel. Eqpt	37,964,437	7.1	2,695,475	7.4		40,104,401	7.1	2,847,412	7.5		39,187,914	7.1	2,782,342	7.5	
Dial Central Office Tel. Eqpt	16,985,792	6.0	1,019,148	6.7	3,681,665	17,253,456	6.0	1,035,207	6.8	3,900,334	20,888,252	6.0	1,253,295	6.8	4,085,179
Other Eqpt. of Central Offices	1,742,347	7.0	121,964	5.3 6.7	116,737	1,653,715	7.0	115,760	5.3 7.2	119,067	1,578,308	7.0	110,482	5.3 7.2	113,638
Station Apparatus	17,447,768	7.0	1,221,344	6.7	1,169,000	17,037,912	7.0	1,192,654	6.8	1,158,578	16,589,115	7.0	1,161,238	6.8	1,128,060
Private Branch Exchanges	10,417,327	8.3	864,638	7.1	739,630	10,949,197	8.3	908,783	7.3	799,291	10,901,134	8.3	904,794	7.3	795,783
Booths & Special Fittings	766,617	2.7	20,699	4.3	32,965	1,066,527	2.7	28,796	4.0	42,661	1,331,143	2.7	35,941	4.0	53,246
Exchange Pole Lines	3,128,005	8.7	272,136	4.8	150,144	3,201,481	8.7	278,529	4.8	153,671	3,253,549	8.7	283,059	4.8	156,170
Exchange Aerial Cable	5,750,720	5.0	287,536	5.0	287,536	5,969,274	5.0	298,464	5.6	334,279	6,008,043	5.0	300,402	5.6	336,450
Exchange Underground Conduit	16,308,248	2.4	391,398	2.3	375,090	17,303,744	2.4	415,290	2.3	397,986	17,966,330	2.4	431,192	2.3	413,226
Exchange Underground Cable	33,993,241	3.8	1,291,743	3.6	1,223,757	35,862,398	3.8	1,362,771	3.4	1,219,322	36,425,140	3.8	1,384,155	3.5	1,274,880
Exchange Submarine Cable	13,779	7.0	965	5.0	689	13,249	7.0	927	5.0	662	54,544	7.0	3,818	5.0	2,727
Toll Pole Lines	40,891	6.7	2,740	5.3	2,167	43,799	6.7	2,935	5.3	2,321	41,365	6.7	2,771	5.3	2,192
Toll Aerial Cable	23,357	2.5	584	3.8	888	23,753	2.5	594	4.1	974	23,775	2.5	594	4.1	975
Toll Aerial Wire	66,683	7.2	4,801	3.9	2,601	71,063	7.2	5,117	5.0	3,553	36,893	7.2	2,656	5.0	1,845
Toll Underground Conduit	443,332	2.0	8,867	2.0	8,867	517,458	2.0	10,349	2.0	10,349	517,458	2.0	10,349	2.0	10,349
Toll Underground Cable	4,090,846	2.4	98,180	3.4	139,089	4,896,819	2.4	117,524	3.1	151,801	5,018,155	2.4	120,436	3.1	155,563
Toll Submarine Cable	6,846	7.0	479	5.0	342	6,470	7.0	453	5.0	324	6,470	7.0	453	5.0	324
Office Furniture & Fixtures	1,674,512	7.0	117,216	6.1	102,145	1,816,065	7.0	127,125	6.7	121,676	1,880,787	7.0	131,655	6.7	126,013
Total	$164,209,725	5.36	$8,793,572	5.11	$8,393,626	$172,512,398	5.31	$9,160,895	5.12	$8,829,054	$176,407,974	5.28	$9,316,521	5.13	$9,053,509

(Here follows, Exhibit A-266, side folio 3435).

EXHIBIT A-266

A-266

AT THE TOP OF THE HILL

A LONE figure in overalls surveys the fields of his labor. Freshly planted rows point their even lines around a gently rising hill. Seemingly the world and its people are far away. But this man is not alone!

His home is at the top of the distant hill. And in his home is a telephone. Eighty-five million miles of wire lead to it. His call is a command to one or more of several hundred thousand employees. Day or night he may call, through the Bell System, any one of nearly twenty million other telephones in this country and an additional twelve million abroad.

And yet, like you, he pays but a small sum for a service that is frequently priceless in value. The presence of the telephone, ready for instant use, costs only a few cents a day. With your telephone, you are never alone. It is an investment in companionship, convenience, and security. Through it you can project your personality to the faraway places of the earth, or bring familiar voices to the friendliness of your fireside.

Undoubtedly a great factor in the continued progress and improvement of telephone service is the intangible but real spirit of service that has become a tradition in the telephone business. This spirit expresses itself daily and in any emergency. And behind the army engaged in giving service is the pioneering help of a regiment of five thousand scientists and technical men, engaged in the sole task of working for improvement. This group devotes itself exclusively to seeking ways and means of making your telephone service constantly better and better.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

3435

[fol. 3436]

EXHIBIT A-267

Illinois Bell Telephone Company, Chicago Exchange

Comparison of Depreciation and Amortization of Landed Capital Based on Book Cost and Reproduction Cost New

Year	Account 608—Depreciation of Plant and Equipment			Account 340—Amortization of Landed Capital			Total (Accounts 608 and 340)		
	Based on Book Cost	Based on Reproduction Cost New	Difference	Based on Difference	Based on Reproduction Cost New	Difference	Based on Book Cost	Based on Reproduction Cost New	Difference
1923	$4,480,954	$5,964,184	$1,483,230	$12,565	$21,230	$8,665	$4,493,519	$5,985,414	$1,491,895
1924	4,709,950	6,743,338	2,033,388	13,767	23,578	9,811	4,723,717	6,766,916	2,043,199
1925	5,385,712	7,231,638	1,845,926	14,770	26,076	11,306	5,400,482	7,257,714	1,857,232
1926	6,203,023	7,762,868	1,559,845	15,726	28,172	12,446	6,218,749	7,791,040	1,572,291
1927	6,839,302	8,226,455	1,387,063	16,565	30,510	13,945	6,855,957	8,256,965	1,401,008
1928	7,641,460	8,716,859	1,075,399	11,881	21,613	9,732	7,653,341	8,738,472	1,085,131
1929	8,120,382	9,000,904	880,522	12,666	22,703	10,037	8,133,048	9,023,607	890,559
1930	8,769,886	9,638,809	868,923	11,883	21,019	9,136	8,781,769	9,659,828	878,059
1931	9,146,268	10,101,534	955,266	12,500	21,887	9,387	9,158,768	10,123,421	964,653

(Here follow Exhibits A-268 and A-269, side folios 3437 and 3438)

[fol. 3437]

EXHIBIT A-268

Illinois Bell Telephone Company

Comparison of Rates of Return for Chicago Area With all Associated Operating Companies Including Long Lines

	1923	1924	1925	1926	1927	1928	
Associated Operating Companies Including Long Lines:							
(a) Average Fixed Capital:							
All Companies—Exhibit X-302	$1,678,800,389	$1,933,324,730	$2,225,576,546	$2,497,494,976	$2,692,004,293	$2,936,520,852	$
Long Lines—Exhibit X-301	110,714,716	127,264,004	141,222,313	156,209,287	187,995,375	222,655,921	
Total—All Companies Including Long Lines	1,789,515,105	2,060,588,734	2,366,798,859	2,653,704,263	2,879,999,668	3,159,176,773	3
(b) Balance Available for Return:							
All Companies—Exhibit X-302	88,102,052	98,689,312	127,356,155	154,808,887	161,698,045	185,267,326	
Long Lines—Exhibit X-301	18,556,460	19,006,222	23,144,230	23,329,752	23,949,211	29,724,686	
Total—All Companies Including Long Lines	106,658,512	117,695,534	150,500,385	178,138,639	185,647,256	214,992,012	
(c) Per Cent of Return—(b) ÷ (a)	5.960%	5.712%	6.359%	6.713%	6.446%	6.805%	
Illinois Bell Telephone Company—Chicago Area:							
(a) Average Fixed Capital—Exhibit X-328	$92,811,249	$105,513,839	$118,740,547	$133,704,654	$148,212,139	$162,449,631	
(b) Balance Available for Return (under present rates)—Exhibit X-328	5,920,818	6,902,264	7,429,687	7,803,441	7,904,217	8,728,893	
(c) Per Cent of Return (under present rates)—(b) ÷ (a)	*6.379%	6.542%	6.257%	5.836%	5.333%	5.373%	
(d) Estimated Reduction under Rates in Suit—Exhibit A-49	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110	
(e) Balance Available for Return (under rates in suit)—(b) – (d)	4,363,578	5,335,444	5,829,201	6,135,187	6,208,487	6,994,783	
(f) Per Cent of Return (under rates in suit)—(e) ÷ (a)	*4.702%	5.057%	4.909%	4.589%	4.189%	4.306%	
(g) Per Cent "Estimated reduction under rates in suit" of "Balance Available for Return (under present rates)"—(d) ÷ (b)	26.30%	22.70%	21.54%	21.38%	21.45%	19.87%	

* Year 1931 not shown on X-301. Amounts were computed from Company's records on the same basis used in X-301.

* These items represent the return on the entire business of the Chicago Exchange which is comparable to the return shown for Associated Operpanies including Long Lines. For return on total intrastate business of the Chicago Exchange see next sheet.

NOTE.—Average Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work or Materials and Supplies.

[fol. 3438]

EXHIBIT A-269

Illinois Bell Telephone Company, Chicago Area

Total Intrastate Rate of Return

	1923	1924	1925	1926	1927	1928	
(A) Average Fixed Capital—X-328	$88,663,316	$100,540,215	$112,486,829	$126,061,831	$139,205,005	$151,459,710	$
(B) Balance Available for Return (under present rates)—X-328	5,347,533	6,230,178	6,650,718	6,887,012	6,877,089	7,601,567	
(C) Per Cent of Return (under present rates)—(B) ÷ (A)	6.031%	6.197%	5.912%	5.463%	4.940%	5.019%	
(D) Estimated Reduction under Rates in Suit—Exhibit A49	1,541,668	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301	
(E) Balance Available for Return (under rates in suit) (B) – (D)	3,805,865	4,679,183	5,068,157	5,236,442	5,200,012	5,888,266	
(F) Per Cent of Return (under rates in suit)—(E) ÷ (A)	4.292%	4.654%	4.506%	4.154%	3.736%	3.888%	
(G) Per Cent "Estimated Reduction Under Rates in Suit" of "Balance Available for Return (under present rates)" (D) ÷ (B)	28.83%	24.89%	23.80%	23.97%	24.39%	22.54%	

NOTE.—Average Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work in or Materials and Supplies.

EXHIBIT A-268

Illinois Bell Telephone Company

Comparison of Rates of Return for Chicago Area With all Associated Operating Companies Including Long Lines

	1923	1924	1925	1926	1927	1928	1929	1930	1931
.....	$1,678,800,389	$1,933,324,730	$2,225,576,546	$2,497,494,976	$2,692,004,293	$2,936,520,852	$3,191,558,333	$3,484,060,236	$3,696,091,208
.....	110,714,716	127,264,004	141,222,313	156,209,287	187,995,375	222,655,921	277,026,858	362,501,503	406,023,768
.....	1,789,515,105	2,060,588,734	2,366,798,859	2,653,704,263	2,879,999,668	3,159,176,773	3,468,585,191	3,846,561,739	4,102,114,976
.....	88,102,052	98,689,312	127,356,155	154,808,887	161,698,045	185,267,326	202,796,612	199,709,520	202,045,817
.....	18,556,460	19,006,222	23,144,230	23,329,752	23,949,211	29,724,686	34,626,494	29,202,361	26,501,240
.....	106,658,512	117,695,534	150,500,385	178,138,639	185,647,256	214,992,012	237,423,106	228,911,881	228,547,057
.....	5.960%	5.712%	6.359%	6.713%	6.446%	6.805%	6.845%	5.951%	5.571%
.....	$92,811,249	$105,513,839	$118,740,547	$133,704,654	$148,212,139	$162,449,631	$176,024,193	$186,971,863	$193,354,389
—Exhibit X-328	5,920,818	6,902,264	7,429,687	7,803,441	7,904,217	8,728,893	11,091,055	11,044,656	10,268,587
a)	6.379%	6.542%	6.257%	5.836%	5.333%	5.373%	6.301%	5.907%	5.311%
A-49	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110	1,762,436	1,666,374	1,450,864
—(b) — (d)	4,363,578	5,335,444	5,829,201	6,135,187	6,208,487	6,994,783	9,328,619	9,378,282	8,817,723
)	4.702%	5.057%	4.909%	4.589%	4.189%	4.306%	5.300%	5.016%	4.560%
of "Balance Avail-									
)	26.30%	22.70%	21.54%	21.38%	21.45%	19.87%	15.89%	15.09%	14.13%

t shown on X-301. Amounts were computed from Company's records on the same basis used in X-301.
represent the return on the entire business of the Chicago Exchange which is comparable to the return shown for Associated Operating Com-
ng Lines. For return on total intrastate business of the Chicago Exchange see next sheet.
ge Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work in Progress
pplies.

EXHIBIT A-269

Illinois Bell Telephone Company, Chicago Area

Total Intrastate Rate of Return

	1923	1924	1925	1926	1927	1928	1929	1930	1931
.....	$88,663,316	$100,540,215	$112,486,829	$126,061,831	$139,205,005	$151,459,710	$162,493,935	$170,958,739	$175,710,631
328	5,347,533	6,230,178	6,650,718	6,887,012	6,877,089	7,601,567	9,490,091	9,152,490	8,494,616
.....	6.031%	6.197%	5.912%	5.463%	4.940%	5.019%	5.840%	5.354%	4.834%
.....	1,541,668	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301	1,740,582	1,645,878	1,433,744
(D)	3,805,865	4,679,183	5,068,157	5,236,442	5,200,012	5,888,266	7,749,509	7,506,612	7,060,872
.....	4.292%	4.654%	4.506%	4.154%	3.736%	3.888%	4.769%	4.391%	4.018%
Balance Available									
.....	28.83%	24.89%	23.80%	23.97%	24.39%	22.54%	18.34%	17.98%	16.88%

Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work in Progress
plies.

[fol. 3439] EXHIBIT A-269-A

Trust Agreement

Pension Fund

Illinois Bell Telephone Company and Bankers Trust Company, Trustee

Dated December 31, 1927

[fol. 3440] This agreement, dated as of the thirty-first day of December, 1927, by and between Illinois Bell Telephone Company, a corporation organized under the laws of the State of Illinois (hereinafter called the "Company"), party of the first part, and Bankers Trust Company, a corporation organized under the laws of the State of New York and having its principal place of business in the City of New York, in said State (hereinafter called the "Trustee"), party of the second part, witnesseth:

Whereas, the American Telephone and Telegraph Company (hereinafter called the "American Company"), entered into an agreement, dated as of December 31, 1927, with the Trustee, providing for the establishment of a trust fund as a Pension Fund, a copy of which agreement is attached hereto and marked "A"; and

Whereas, Section 18 of said agreement is as follows:

"18. Any Associated Company of the Bell System, so-called, or any subsidiary or affiliated or connecting company, which has established a plan providing for the payment of service pensions to its employees, may, upon the execution and delivery to the Trustee of an instrument, substantially in the form hereto attached and marked "A", and upon the approval in writing of the Company, make payments to the Trustee for the purpose of establishing a trust fund to meet its service pension obligations under such plan, and thereupon such trust fund shall be held by the Trustee for said purpose, and subject to the same provisions and conditions as are herein set forth with respect to the Pension Fund. Wherever in this instrument, except in the first and last sentences of this paragraph, the name of the American Telephone and Telegraph Company or the designation "the Company" appears, the name of such

other company shall be construed as substituted with respect to the trust fund established by it. Separate accounts and records shall be kept by the Trustee for each [fol. 3441] such trust fund; and payments directed by any such corporation shall be made only from the trust fund established by it. Unless specific instructions are given to the Trustee in writing by any such company as to the manner of investing and reinvesting its trust fund, investment thereof shall be made in the manner provided in this instrument for the investment of the Pension Fund of the American Telephone and Telegraph Company, and all or any part of the trust fund of any such company may be invested in the bonds or notes, whether secured or unsecured, of the company, of the American Telephone and Telegraph Company or of any other Associated or subsidiary company of the Bell System;"

and

Whereas, the Company is an Associated Company of the Bell System, or a subsidiary or affiliated or connecting company, and has established a plan providing for the payment of service pensions to its employees, entitled "Plan for Employees' Pensions, Disability Benefits and Death Benefits", which became effective January 1, 1913, a copy of which, including all modifications thereof, is attached hereto (which Plan, together with all modifications heretofore or hereafter made and all substitutions therefor, is hereinafter designated as "the Plan"); and

Whereas, the Company, with the approval of said American Telephone and Telegraph Company, which approval is indorsed hereon, for the purpose of establishing a trust fund as a Pension Fund to meet its service pension obligations under the Plan, has paid to the Trustee the sum of Seven Hundred Thirty-eight Thousand Five Hundred Fourteen and 95/100 Dollars ($738,514.95), the receipt of which is hereby acknowledged, and may hereafter from time to time make further payments to the Trustee for said purpose (said payment and all additions thereto and accumulations thereon being hereinafter referred to as the "Pension Fund");

Now, therefore, in consideration of the premises, it is agreed between the parties hereto that the Pension Fund shall be held, managed and disposed of by the Trustee sub-

[fol. 3442] ject to the terms and conditions of said contract between the American Company and the Trustee, and subject particularly to the provisions of said Section 18; and that the provisions of said contract shall in all respects be applicable to the Pension Fund, except that the name of this Company shall be substituted with respect to the Pension Fund for the name or designation of the American Company wherever, other than in the first and last sentences of said Section 18, the name or designation of the American Company appears in said contract.

In witness whereof, the parties hereto have caused their respective corporate names to be hereunto subscribed by their respective Presidents or Vice Presidents, and their respective corporate seals to be hereunto affixed, duly attested by their respective Secretaries or Assistant Secretaries, the 30th day of December, 1927.

Illinois Bell Telephone Company, by W. R. Abbott, President. Attest: E. G. Drew, Secretary. Bank-[fol. 3443] ers Trust Company, by H. F. Wilson, Jr., Vice-President. Attest: C. W. Campbell, Assistant Secretary.

Approved.

American Telephone and Telegraph Company, by Walter S. Gifford, President.

Attest: A. A. Marsters, Secretary.

[fol. 3444] EXHIBIT A-271

Earnings of the Western Electric Company on Bell Business Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account Compared with 88 Manufacturing Companies, 1925 to 1930 Inclusive.

(Dollars in Thousands)

	a	b	c	d	e	f	g
	Sales	Earnings	Per Cent Earnings to Sales (b ÷ a)	Average Investment	Per Cent Earnings to Average Investment (b ÷ d)	Average Investment Less Amount of Deprec. Reserve Account	Per Cent Earnings to Average Investment Less Amount of Deprec. Reserve Accoutn (b ÷ f)
Western Electric Company Bell Business	$1,693,987	$92,012	5.4	$1,127,152	8.2	$843,860	10.91
88 Manufacturing Companies		4,886,694		40,128,000	12.2	33,706,000	14.52

[fols. 3445 & 3446] EXTRACTS FROM EXHIBIT DEPOSITION
EXHIBIT NO. 1

Article testified to by Dr. Jewett from Bell System Technical Journal, January, 1930

Telephone Communication System of the United States*

By Bancroft Gherardi and F. B. Jewett

* Presented by Dr. F. B. Jewett before the World Engineering Congress, Tokio, Japan, October, 1929.

This paper presents the results which have been obtained up to the present time in developing telephone communication in the United States of America, this development having been worked out in a form to meet the particular conditions which present themselves in that country. The paper first deals with a brief description of the general structure and organization of the telephone communication system giving the organization of the Bell System which handles the greater part of the telephone service of the country and the reasons for and advantages of this organization. In this connection some figures are presented with respect to the technical personnel who are continuously engaged in studies to develop the art and to provide new methods and facilities for improving the service.

Local service, that is the service within the limits of a single telephone exchange area, is next discussed. Figures are given with respect to the volumes of telephone calls handled in the Bell System, the speed with which the connections for these calls are completed and the operating force required. Reference is also made to the standards of transmission given and the various problems encountered in meeting these standards. Figures are given with respect to station growth, to the increased efficiency of station apparatus and to the improvement in types of instruments. Various types of private branch exchanges provided to meet the needs of customers using a large amount of telephone service are discussed. The cable plant is considered mainly from the construction standpoint and typical illustrations are given of some of the construction practices.

[*Words and figures enclosed in brackets erased in copy.]

The various types of central office switching systems in common use are described, including magneto, common battery and dial systems, the latter including both the step-by-step and panel systems which are being provided in increasing amounts in the Bell System. The subject of buildings to house these various equipments as well as the op-
[fol. 3447] erating forces and headquarters staffs in many cases is briefly discussed, also standardized layouts and floor plans. The problem of giving telephone service in the rural communities, which is a very important one in the telephone development in the United States, is also briefly treated.

The toll service is considered, first with respect to the shorter haul toll business and the problems involved and then with respect to the long distance toll service. Figures are given showing the speed of service and the amount of traffic handled. For the short distance toll service, two important methods of handling the business are described, namely, manual straightforward tandem and dial tandem.

The long distance service, which has developed most rapidly in recent years, is described in some detail in the paper. Among the important features of this service is noted the recently developed method of completing toll calls with sufficient speed so that on most of the calls the calling subscriber remains at the telephone. The various types of toll circuits are described including open wire circuits operated both at voice frequencies and by carrier systems and long toll cable circuits. The operation of these long circuits requires a large number of repeaters in tandem and the design and maintenance problems which this arrangement requires are pointed out in the paper.

Information is given with respect to international telephone connections in North America, between North America and Europe and other international connections. In covering this subject some of the important items relating to the operation of the transatlantic radio channels are given and reference made to the projected transatlantic telephone cable.

Various forms of special services closely allied with the message telephone service are described. These include telegraph service, telephone circuits provided for private use, foreign exchange service, telephone networks for program transmission to radio broadcasting stations, electrical

transmission of pictures, telephony in connection with aircraft operation, ship to shore telephony, telephony to mobile stations such as railroad trains, telephone services of railroads and other public utilities, telephone public address systems and television. Reference is also made to some of the by-products of the telephone development work which include improvements in submarine cable telegraphy brought about by the discovery of the alloys known as "permalloy and perminvar," the development work in the reproduction of sound and in the talking motion pictures.

In concluding, the paper points out that careful studies of the future development of the telephone industry indicate a somewhat accelerated rate of development of the services required to meet the demands of the customers and [fol. 3448] a continuing very rapid technical development of telephone plant and systems to provide the necessary facilities.

In treating such a large subject in a paper of this kind it has been necessary to deal with technical problems in rather general terms and as an attachment to the paper references are made to numerous articles in the technical press for the more technical information.

General

The purpose of this paper is to give a general description of the telephone communication system of the United States of America, outlining briefly some of the more important engineering problems involved and indicating the service results obtained. At the beginning of this paper it seems important to give a brief description of the general structure and organization of the telephone communication system.

The commercial telephone system of the United States is entirely owned and operated by corporations, partnerships, and individuals. A group of 24 closely associated Bell Telephone Operating Companies owns and operates 14.8 million telephones and the telephone lines used for toll service within their territories. In addition there are in the country about 4.7 million telephones owned by several thousand independent telephone companies which have operating agreements with the Bell Companies providing for the interconnection of lines, thus permitting the operation of 19.5 million telephones as a single system. There are in

addition about 140,000 telephones in the country not connected with the Bell System.

The 24 Bell Operating Companies cover the entire area of the United States and are responsible for all Bell Tele- [fol. 3449] phone operations within their respective areas. A number of the larger companies are subdivided into autonomous operating units, there being at the present time a total of 34 such units in the country. In many cases the area within corporate limits or within the limits of an operating unit is identical with that of a major political subdivision of the United States (a State) and this simplifies the application of governmental regulation. A typical organization of a Bell Operating Company is indicated in Fig. 1.

[fol. 3450] In order to facilitate the best possible handling of the long distance service between points in different operating companies and to avoid the problems which would arise from divided responsibility, the long distance business involving territories of two or more Associated Companies is handled throughout the country by the Long Lines Department of the American Telephone and Telegraph Company. These operations are, of course, in the closest cooperation with the operations of the Associated Companies without duplication of construction or of operating effort.

An important feature of the Bell Telephone System is the general departments maintained by the American Telephone and Telegraph Company, including the Bell Telephone Laboratories. These departments, constituting about 7,500 engineers, scientists, business experts and assistants, are continuously engaged in studies to develop the art and to provide methods and facilities for improving the service. They also provide consulting advice to the operating companies on all phases of the telephone business and render to them a large variety of services. One of these services is making available to all the companies rights under all patents necessary for the fullest and most economical development of the business. It is the intention, in general, that work which can best be done once for all the entire telephone system rather than individually by the several operating companies shall be done by these general departments and that the specific solution of the telephone problems in each area shall be the responsibility of the operating company involved, who, however, are free

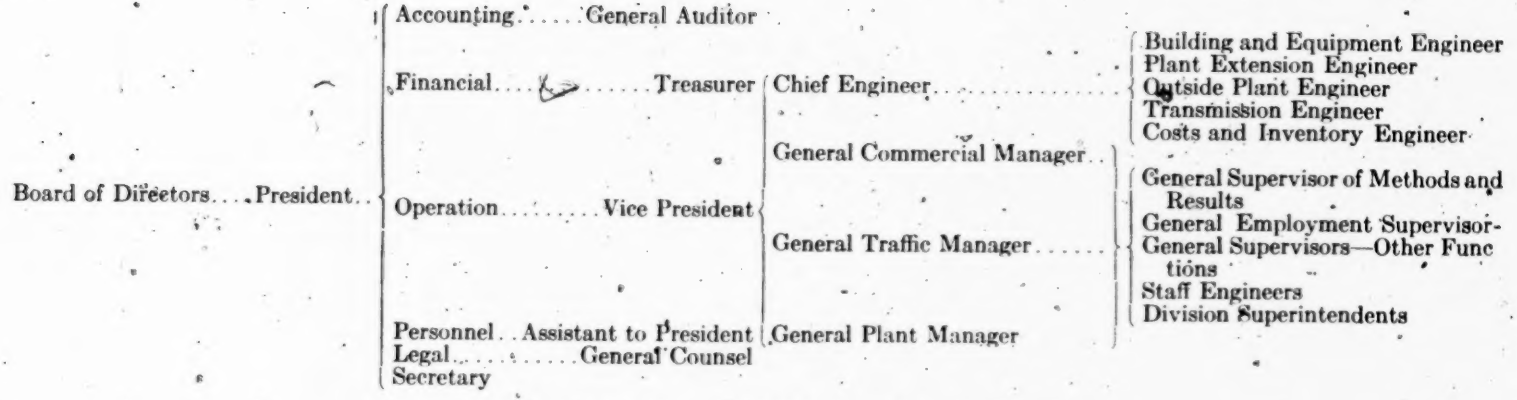


Fig. 1—Organization of typical Bell Telephone Operating Company.

at all times to get the advice and assistance of the general staff. In all of the work of the general staff close contact [fol. 3451] is maintained with the various operating telephone companies of the Bell System. The experiences of these companies are studied and analyzed to make available for all the companies the valuable results to be derived in this way, and the advantages to be obtained by comparing the experiences of different companies under similar conditions.

The organization of the American Telephone and Telegraph Company and the Bell Telephone Laboratories is indicated in Fig. 2.

Another very important feature of the Bell System is the very close relation between operating and manufacturing branches of the work through the ownership by the American Telephone and Telegraph Company of the Western Electric Company, Inc., and arrangements between that company and the operating companies for the supply of telephone apparatus and materials. This permits the manufacture of apparatus and the purchase of materials from outside suppliers to be done on the basis of the large quantities required for the entire Bell System resulting in great economies.

The organization of the Bell Telephone System is such as to result in close cooperation between the companies dealing with different branches of telephone work. This brings about the conditions necessary for universal service, for the development of the art along orderly and non-conflicting lines, and for the standardization of all apparatus, communication systems and operating methods to the extent that such standardization is helpful.

New types of telephone plant, operating methods, methods of maintenance and business methods are standardized [fol. 3452] by the general departments of the American Telephone and Telegraph Company, and are adopted and placed in use by all of the Associated Operating Companies to the extent that they apply to their local conditions. Special arrangements are, of course, made available to meet special requirements. The specification for all standardized apparatus and materials are prepared by the Bell [fol. 3453] Telephone Laboratories, and the Western Electric Company is enabled to concentrate on the task of purchasing and manufacturing standardized supplies, ma-

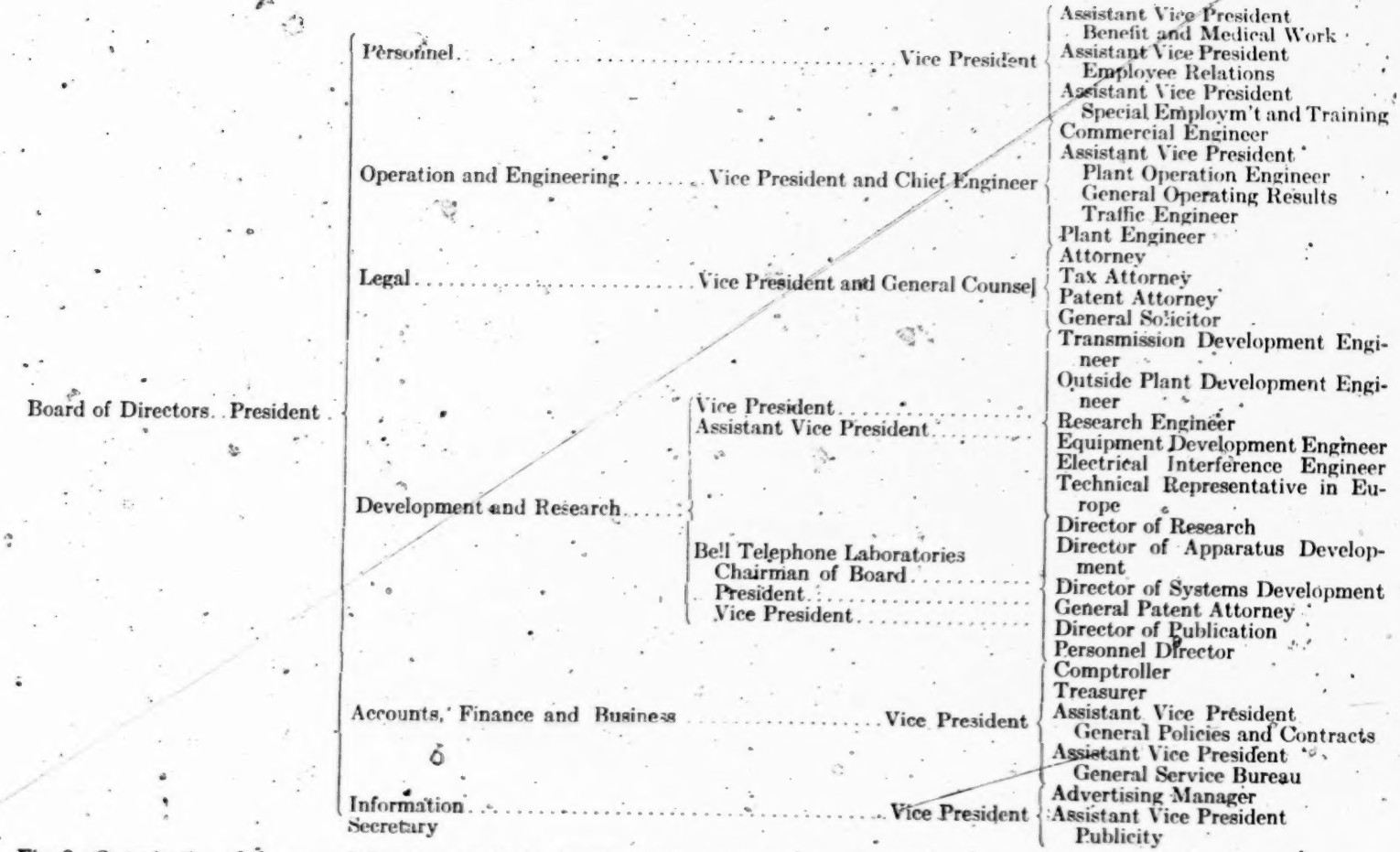


Fig. 2—Organization of the general departments of the American Telephone and Telegraph Company, including Bell Telephone Laboratories.

terials and apparatus in accordance with these standard specifications. Standardization also has great operating advantages in minimizing stocks of materials and providing interchangeability both of materials and working forces and is very important in making possible the operation of the entire interconnected network as a single system with uniform grades of service.

As has been stated by Mr. Gifford, President of the American Telephone and Telegraph Company, "The ideal and aim today of the American Telephone and Telegraph Company and its Associated Companies is a telephone service for the nation, free, so far as humanly possible, from imperfections, errors, or delays, and enabling at all times any one anywhere to pick up a telephone and talk to any one else anywhere else, clearly, quickly and at a reasonable cost." With this aim in view, continuous effort is made further to improve and to extend the service within the nation and also the telephonic connections to other nations. It is recognized also that changes in business and social conditions bring about repeated changes in the services desired by the people of the nation and in the character and appearance of facilities furnished to them. These facts, in addition to the onward march of the application of science, form an important basis for the continued study by the general staff of the development of all phases of the telephone system.

A few figures relative to the size and growth of the Bell System are helpful in an understanding of the more specific telephone problems which are discussed below. Such figures are included in the statistical summary appended to [fol. 3454] this paper and include data regarding telephone messages, numbers of telephones, miles of wire and amount of telephone plant.

In accordance with the general organization of the Bell System, the engineering problems involved in the design, construction and maintenance of the plant of each operating telephone company are the responsibility of the engineering department of that company. General studies of methods of improvement of service and the development of new apparatus and systems of communication, together with consulting engineering advice, are provided by the general departments.

For the provision of new plant to meet additional demands for service, in the case of the more important items, often one year, and sometimes more, is required between the completion of detailed engineering plans and completion of construction. Furthermore, to obtain maximum economy it is necessary that much of the new construction provide for expected increases in demands for service for a number of years to come. This applies particularly to telephone buildings and to runs of underground conduit and to a lesser extent to cables, pole lines and many other very important parts of the telephone plant. The engineering of the additions to the Bell Telephone System, now aggregating over 500 million dollars a year is, therefore, necessarily based on careful forecasts of the amount and type of business to be expected for a number of years in the future and good engineering judgment must be applied in determining the types, quantities and design of plant. These must take into account not only the expected amount of service required but also expected future changes in the character and standards of service demanded and in the apparatus and materials expected to become available. In [fol. 3455] view of the capital expended in extensions and the large amount of plant already in service, the engineering work involved is considerable. There are now approximately 10,000 engineers engaged in the work of the Bell System of which approximately 6,300 are in the operating companies, 2,200 in the headquarters departments and 1,500 in the Western Electric Company. These figures apply to men doing work of engineering grade, and inclusion of assistants of all kinds, stenographical, clerical, laboratory, etc., would more than double these figures.

Toll Service

Service between telephones which are not in the same local exchange area is called "Toll Service." With the exception of less than one per cent of the telephones which are not connected to the Bell System, toll service is offered in the United States between any two telephones in the country and to a very large extent the toll plant is adequate to provide good service between any two of these telephones.

An outstanding feature of the last few years has been the rapid growth of the toll service. This is indicated in the appended statistical summary which shows that during the last five years the completed toll messages have increased by 67 per cent. During this same period the number of telephones in service have increased by about 28 per cent. These figures show that in spite of the continued increase in the number of telephones in service, the number of toll messages per telephone have increased by about 30 per cent for this period.

One important cause of the rapid increase in toll usage has been the material improvements in toll service.

Figure 26 shows the increase in the speed of toll service since 1920 expressed in terms of the average time required from the placing of a call to the response of the called party, or until the operator gives a definite report regarding the call. The service is sufficiently fast so that on 95 per cent of the calls, the subscriber stays at the telephone. This makes possible still more rapid service and simplified operation.

[fol. 3456] There have also been very great improvements during this period in the clearness of speech transmission. The maximum permissible transmission loss between two subscribers on a toll connection has been materially reduced. The toll plant and subscriber plant are now so designed that most of the messages are handled with a maximum transmission equivalent for the longest subscriber lines of 20 to 25 decibels overall referred to the standard transmission reference system.

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During the past three years an important change has been generally applied in the methods of handling long distance service. Formerly the toll operator first receiving the call recorded the necessary information on a ticket and forwarded this ticket to another operator provided with facilities for completing calls to the particular part of the country involved in each case. An increase in speed has been brought about by providing the operators with arrangements both for recording calls and for completing calls to all points so as to avoid, in a large proportion of

the cases, the necessity for transmitting the information to a second operator.

By means of this change in method and other improvements, the average speed of service for all long distance messages has been decreased from 6.9 minutes in 1925 to 2.6 minutes in 1928. Also in 1928, 90.7 per cent of the calls made by the customers resulted in completed messages.

In placing a long distance call, the telephone subscriber in the United States may give simply the telephone number and city desired. This has some advantages in speed of service. At present, 50 per cent of the long distance messages are handled in this way and this per cent is increas- [fol. 3457] ing. About 15 per cent of the messages are handled in this same way, the called telephone number, however, being supplied by the operator. In addition, the telephone system offers, for a somewhat greater charge, what is called a "particular person" service. This means that the subscriber may, if he wishes, ask to talk with a specified person at a distant point, giving such information as he can regarding how that person may be located. The telephone operator then undertakes to complete this message by locating the desired party, following him up to points other than that designated, if necessary, and if the calling subscriber wishes. The percentage of messages handled on this basis increases with the length of haul.

When a subscriber wishes he may transmit to the telephone company in advance information regarding a number of calls which he wishes to have completed in sequence, beginning immediately or at a specified time. These sequence calls, as they are termed, are used particularly in connection with selling by long distance telephone. At the present time at the New York long distance office, for example, about five per cent of the business is in the form of sequence calls, some of the sequence lists including as many as 1,000 calls.

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A striking feature of the long distance service is the more rapid growth of very long haul business than business of moderate length. Figures 32, 33 and 34, for example, show respectively the growth in messages for the

last five years between New York and Boston, 370 kilometers, New York and Chicago, 1,380 kilometers, and the transcontinental business between New York and Chicago at one end and Los Angeles and San Francisco at the other end, an average of 4,700 kilometers. It will be noted that while the toll business as a whole has increased as noted above, 67 per cent in this period, the New York-Boston business has increased 62 per cent, the New York-Chicago busi- [fol. 3458] ness 194 per cent and the transcontinental business 430 per cent.

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To handle the toll business of the United States has required completing a network of toll telephone lines completely covering the country. This network is shown in a general way in Fig. 35. It consists at the present time of about 14 million kilometers of wire on about 300,000 kilometers of toll route. The toll circuits are partly open wire, supported on insulators and are partly in cable. Both the open wire and cable circuits are, in general, phantomed, giving three independent circuits for each two pairs of wires, and in addition on the open wire is superposed a considerable amount of carrier current telephone circuits.

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The number of circuits which it is practicable to provide by means of open wire lines has during the past decade been very greatly increased by the extensive use of carrier telephone for superposing on the telephone circuits additional channels of communication carried by currents above the voice range of frequencies. These systems now form a network covering the entire country and in some areas a large proportion of the circuit growth on open wire lines is taken care of by carrier systems. The systems range in length from a minimum of 75 kilometers to a maximum of 3,800 kilometers.

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The long haul carrier systems give very satisfactory service and form a part of some of the longest circuits in the country. For example, the direct circuits between New York and Los Angeles, California, 5,100 kilometers in

[fol. 3459] length, are made up of cable circuits from New York to Pittsburgh connected permanently to a Pittsburgh-St. Louis carrier system, and a St. Louis-Los Angeles carrier system. These two carrier systems connected together total 4,550 kilometers in length with 13 intermediate repeaters. Similarly the New York-San Francisco circuits are in cable from New York to Chicago and there permanently connected to the Chicago-Sacramento carrier system 3,800 kilometers long with 10 intermediate repeaters.

The short haul carrier system is similar in its general characteristics but is simplified and provides a single carrier circuit for each pair of wires. In the case of both systems, single side-band carrier suppression circuits are used.

In Fig. 37 showing the standard arrangement of open wires on pole lines are indicated the carrier telephone channels and also the carrier telegraph channels which can be superposed on these circuits without mutual interference, after the installation of suitable transpositions which have been designed to neutralize the mutual induction between the circuits. It is noted that with this arrangement it is possible to obtain from 40 wires 54 telephone circuits. Also 80 telegraph circuits are obtained, used for special contract service as described later in this paper.

On a number of the open wire toll routes carrying very long circuits, it has become important to provide arrangements for using a larger number of long haul carrier telephone systems, thus obtaining a larger number of circuits. Whereas a number of arrangements using the standard spacing of wires have been tried out, it is found extremely difficult to continue the use of phantoms and to so transpose the wires as to provide adequate freedom of interference between the higher frequency carrier channels if these are used on all pairs. The difficulty of doing this is evident in considering that in order to avoid overhearing [fol. 3460] it is necessary that the power transfer between different circuits should not exceed one part in a million even though they are parallel to each other for long distances.

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Long circuits in toll cables have some extremely interesting electrical characteristics. Figure 44 shows the net

transmission characteristic over a range of frequencies of [fol. 3461] a New York-Chicago toll cable circuit 1,380 kilometers in length. It will be seen that the voice frequencies are transmitted with nearly the same net efficiency over a sufficiently wide band to give a high grade of telephone transmission. The net characteristic indicated, however, is obtained by almost wholly neutralizing with telephone repeaters the very large transmission loss in the circuit. The New York-Chicago circuit, for example, would have an attenuation loss at 1,000 cycles of about 470 db., which means that without amplification the ratio of output power at one end to input power at the other end of the circuit would be 10^{-47}. The combined gain of the 19 telephone repeaters in the circuit is about 461 db., giving about 9 db. net equivalent. Under these conditions, it is evident that a careful regulation of the circuit is essential. For example, variations in the temperature of a circuit in the course of a day could make as much as 30 db. or 1,000 fold difference in the electric power received at the end of the circuit. To prevent such variations affecting the net equivalent the long circuits are all provided with automatic regulators which adjust the gains of the telephone repeaters to compensate for the effect of temperature variations on the equivalent of the circuit.

The effects of transmission delay are also very interesting and important. Voice waves travel considerably more slowly over cable circuits than they do over open wire circuits. For example, the velocity is about 30,000 kilometers per second for "long distance" type cable circuits as compared to nearly 300,000 kilometers per second for non-loaded open wire circuits.

One important result of delaying the speech waves is the "echo" effect. The transmitted currents are in part reflected at the distant terminal due to variations in the impedance of the receiving circuit. If the reflected currents transmitted back to the other end are delayed enough they may be heard by the talker as echoes of his voice. They [fol. 3462] may be again reflected at the sending end of the circuit and returned to the listener as an echo following the directly transmitted speech. The effects of these echoes are largely eliminatd by devices known as "echo suppressors" by means of which the transmission of voice waves in one direction over the circuit causes interruption of the

path over which the echo currents are transmitted in the opposite direction. However, the effectiveness of echo suppressors is limited by the necessity that they shall not be operated by noise currents of extraneous origin as this would interrupt conversations. The echoes, therefore, are an important factor to be taken into account in determining the type of toll cable circuit to be provided to meet the transmission limitations imposed on the long distance circuits.

In cable circuits introducing considerable transmission delay, the fact that the delay is not exactly the same for waves of different frequencies is also important, tending to give rise to what have been sometimes referred to as "transient" effects. In loaded cable circuits the waves of higher frequency are delayed more than those of lower frequency because of the fact that the loading is applied in lumps. The coils and condensers in the repeaters and auxiliary apparatus, on the other hand, tend to delay the waves of lower frequency. The result is that the waves of intermediate frequency arrive first, followed by the waves of higher and lower frequency. Devices known as "phase compensators" can be used to reduce the effects, particularly those caused by the line. To improve the situation at the low end of the frequency scale special attention has been given to the design of the repeaters and auxiliary apparatus.

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Still another effect of the transmission delay is to somewhat slow up and perhaps otherwise interfere with conversations due to the delay which is added to the ordinary [fol. 3463] time elapsing between question and answer. For example, if a cable circuit is 5,000 kilometers long and the voice waves travel 30,000 kilometers per second, the time required for the waves to travel from one end of the circuit to the other is ⅙ second and to make a complete round trip, ⅓ second. This ⅓ second delay is evidently added to the ordinary time which elapses between question and answer. In the United States cable connections somewhat longer than 5,000 kilometers will be used in the future, while for international connections, of course, very much longer distances than this will be involved. In the United States considerable study is, therefore, being given to the

effects of transmission delay and to methods of avoiding difficulties on the very long connections including the development of cable circuits of higher speed.

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Telephone communication was established between the United States and Cuba in 1921 by the placing of three telephone cables between Key West and Havana. Each of these cables furnishes one telephone circuit and a maximum of four telegraph circuits. The requirements for the cables were exacting since a length of about 190 kilometers is combined with a depth of water having a maximum of 1,860 meters. Each cable consists of a central conductor magnetically loaded with a wrapping of fine iron wire and insulated with gutta percha compound. A metallic return path for the telephone currents is furnished by heavy copper tape wrapped outside of the insulation and, [fol. 3464] therefore, in contact with the surrounding water. Three of the telegraph circuits in each cable are obtained by using "carrier currents" at frequencies slightly above the voice range. The fourth is obtained by using frequencies below the voice range.

Connections to Europe:

In 1915 the Bell System experiments on radio reached the point where telephone messages were transmitted by radio from the United States and were successfully received by engineers sent for the purpose to Paris and to the Hawaiian Islands. While the Great War delayed technical and commercial development, in 1923 the Bell Companies were able to carry out a successful demonstration of radio-telephone transmission from a group of telephone officials in New York to a group of people interested in communication assembled for the purpose in London. The success of these experiments led to cooperation with the British Post Office and the establishment in 1927 of telephone service between New York and London. This service has now been extended to include the greater part of the telephones of North America and Europe.

As indicated in Fig. 53 there now exist one long-wave and one short-wave telephone circuit between the two continents. A second short wave circuit will be placed in service about June 1 of this year and a third in December. By

the end of 1933 it is expected that there will be in service between New York and London a group of six circuits consisting of three short-wave radio circuits, two long-wave radio circuits, and one cable circuit. Our best information indicates that the short-wave circuits will be suitable for service at least 60 per cent of the time, and the long-wave, 90 per cent, and the cable, 100 per cent.

[fol. 3465] Since the beginning of 1929, the average number of messages handled per week has been 275. For this period the average number of messages per day, omitting Saturday and Sunday, has been 44. Eighty-nine messages were handled on Christmas Day, 1928.

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Service over the transatlantic facilities is carried on from 6.30 in the morning to 10.00 at night in New York, corresponding to 11.30 in the morning and 3.00 A. M. London. During the winter months the long waves give nearly continuous service over this period. Under summer conditions considerable difficulty is frequently experienced in maintaining the long waves during the afternoon period in New York, corresponding to the evening period in London. At these times, however, the short waves are usually effective.

The projected transatlantic telephone cable will use new magnetic loading materials and new insulating compounds for submarine cables recently developed by the Bell Telephone Laboratories. It will have at least one intermediate repeater point at Newfoundland. A circuit of this kind, differing radically from radio circuit in its characteristics will add both to the message capacity and to the reliability of the transatlantic service.

[fol. 3466] Connections to South America:

Figure 53 indicates a short-wave radiotelephone circuit from New York to South America which, it is expected, will be in service early in 1930. The South American transmitting and receiving stations, which will be in the vicinity of Buenos Aires, will be owned and operated by the companies who operate the local telephone service in Buenos Aires and the wire lines extending to other points in South America.

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Special Services

Telegraph Circuits:

While the Bell System handles practically no commercial telegraph message business, it plays an important part in meeting the communication needs of the United States by furnishing a large mileage of telegraph circuits for the private use of individuals and institutions, and for the use of governmental departments. Over two million kilometers of such circuits are now in use. One-third of this amount [fol. 3467] is used by newspapers and press associations. The greater part of the remainder is used by commercial, financial and other organizations. Between New York and Chicago, a distance of approximately 1,400 kilometers, there are slightly over 300 such circuits now in operation.

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The greater part of such telegraph circuits have in the past been operated by hand-speed Morse telegraph. At the present time, however, nearly a third of the mileage is operated with telegraph printers and this method of operation is rapidly increasing. Two speeds of service employing printers are offered, one operating at 40 words per minute and the other operating at 60 words per minute. At the present time, in view of the use to which this service is put, no demand has arisen for multiplex operation, but this method of operation is possible and will be used if it should become desirable.

The telegraph circuits were originally all obtained as a by-product of the telephone business by compositing or otherwise superposing them on the telephone wires, using direct current for the telegraph circuits. At the present time approximately two thirds are obtained in this way. The remaining third are obtained by "carrier current" methods. The carrier current system of open-wire lines uses frequencies above the voice range and provides ten duplex telegraph circuits on each pair of wires. The carrier current system used on cable circuits employs frequencies within the voice range, the currents being transmitted over an ordinary telephone four-wire cable circuit. This system gives twelve duplex telegraph circuits on each such circuit.

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Radio broadcasting has resulted in the development of networks of telephone circuits for transmitting programs from studios or other places at which they are picked up to the radio station or system of stations from which they are broadcast. By such telephone wire [redacted] cere- [fol. 3468] monies of the Presidential [redacted] on March 4, 1929, were simultaneously trans[redacted] radio stations located all over the United State[redacted]

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A commercial service for the electrical transmission of pictures between the cities of New York, Chicago and San Francisco was inaugurated in April, 1925. The eight cities now connected to this service and the routes of the lines used in connecting them are shown in Fig. 56. In addition, a portable transmitter is provided which may be moved to any desired point. At present this is located in the City of Washington, D. C.

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The Western Union and Postal Telegraph Companies now have a service in which they will accept telegraph messages for "facsimile" transmission over this picture system between those cities which the system reaches. This service has not yet been offered long enough to show how much it will be used.

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Radiotelephony is being used from shore stations to coastal boats in a number of cases in the United States, but not connected to the commercial telephone system. These include particularly certain boats of the U. S. Coast Guard Service. A careful study, including tests, has been made of telephone service to tugboats operating in New York harbor for the purpose of controlling and thus making more efficient the operation of such craft. So far, it is not clear that this service will be commercially justified.

Telephony to Other Mobile Stations:

Consideration has been given to telephone connections for types of mobile stations other than ships and airplanes. Communication with moving trains can technically be carried out with facilities now available. Active studies are

[fol. 3469] under way to determine the practicability of providing such service at a cost which would be attractive commercially and with apparatus which can be limited to a reasonable space on the train.

Telephone Services of Railroads and Other Public Utilities:

The operation of railway systems requires a large amount of communication service. The dispatching of trains was, until recent years, carried out largely by the use of telegraph. This has been rapidly changed until at the present time on over 60 per cent of the total railway mileage the train dispatching is by telephone. The railroads' telephone service to stations in the Bell System is through P.B.X.'s leased to them by the telephone companies. In addition to this, the railroads frequently own private telephone circuits extending along their rights of way which connect to and are switched through these same P.B.X.'s.

Similar arrangements are provided for meeting the special communication needs of electric power companies, oil pipe-line companies and other utilities.

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Furthermore, by using the public address system with suitable long distance telephone circuits, it is possible to convey the proceedings of such occasions simultaneously to audiences in all parts of the country. The local distribution of such proceedings is, however, now done largely by radio broadcast rather than by use of the public address system.

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Television:

The possibility of transmitting pictures of a scene over electrical circuits at so high a speed that the effect is given of seeing at a distance has naturally interested telephone people for a considerable while. However, the large amount of detail which is taken in by the human eye and [fol. 3470] the resulting broad band of frequencies required to transmit this detail as well as the necessary complexity of the terminal apparatus has, so far, prevented the development of a practical service of this kind.

In 1927 the Bell engineers demonstrated to a large number of interested people a television circuit which extended from New York to Washington, a distance of about 440 kilometers.

[fol. 3471] EXTRACTS FROM EXHIBIT DEPOSITION

EXHIBIT #4

Agreement Testified to by Witness Jewett, Entered Into on December 30, 1926

This agreement, made this 30th day of December, 1926, between Western Electric Company, Incorporated, a corporation of the State of New York (hereinafter called the Seller), and Electrical Research Products, Inc., a corporation of the State of Delaware (hereinafter called the Buyer):

* * * * * * *

Whereas, it is mutually desired by the parties hereto that the Buyer shall, subject to certain reservations hereinafter set forth, purchase the business of the Seller which is distinct from its Bell System business, Graybar business, International business and Canadian business, as herein defined, and it is also mutually desired that the Buyer shall purchase certain property, effects, assets, rights, licenses and good-will of the Seller and shall in consideration thereof and the payment by the Seller of the sum of One million dollars ($1,000,000) in cash, issue to the Seller all of the shares of stock of the Buyer which it is authorized to issue;

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Article II

Section 1. Assets to be Sold

The Seller agrees to pay to the Buyer the sum of One million dollars ($1,000,000) in cash and to sell, assign, transfer and deliver to the Buyer, and the Buyer agrees to pur-
[fol. 3472] chase and accept from the Seller, at the times

and in the manner and for the consideration herein expressed, all of the following property of the Seller:

(a) One hundred fifty thousand (150,000) shares of the capital stock of Graybar Electric Company, Inc.

(b) Twenty-six thousand, one hundred sixty (26,160) shares of the capital stock of Northern Electric Company, Limited.

(c) One hundred (100) shares of the capital stock of Western Electric Company, Limited of Canada.

(d) One hundred (100) shares of Western Electric Company, Limited of London.

(e) All accounts receivable which are owing on the date of sale by Western Electric Company, Limited of Canada to the Seller.

(f) All accounts receivable which are owing on the date of sale by Western Electric Company, Limited of London to the Seller.

(g) Bonds and certificates of indebtedness of the United States of the aggregate face value of Thirty million dollars ($30,000,000) subject to outstanding agreements by the Seller to re-sell said securities or any part thereof at rates or on bases fixed at the time the same were purchased by the Seller, which re-sale agreements are assumed by the Buyer.

(h) All accounts receivable outstanding on the date of sale which relate solely to the business herein agreed to be transferred.

[fol. 3473] (i) All interest accrued and unpaid to the date of sale on items (e), (f), (g) and (h) above listed.

(j) All royalties accrued and unpaid to the date of sale under contracts to be assigned by the Seller to the Buyer as hereinafter provided, less such part of said royalties as the Seller is obligated to pay to others.

(k) Apparatus, material and equipment which on the date of sale is under lease or loan by the Seller in the course of that part of the Seller's business to be transferred hereunder to the Buyer.

(l) Claim against Russia on account of deposits in banks, stock interest in and receivables from N. C. Heisler & Company, and accounts receivable owing to the Seller (as assignee of International Western Electric Company, Incorporated and its subsidiaries) from Russian customers.

(m) Claim against Germany for losses and damages in Belgium growing out of the World War.

(n) The Seller's business (as distinguished from its property) existing on the date of sale which is separate and distinct from the business herein reserved to the Seller.

(o) All right, title and interest which the Seller has the right so to transfer, in and to all contracts, good-will, patents, trade-marks and trade-names of the Seller (except the trade-mark or trade-name "Western Electric") in so far as but only to the extent that the same respectively pertain to the business and property herein agreed to be transferred, and subject to all the reservations, terms, conditions [fol. 3474] and limitations in this agreement contained. Among said contracts so to be transferred are included specifically, but not by way of limitation, the contracts listed in "Schedule A" attached hereto and made a part hereof.

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The Seller hereby agrees, subject to all the provisions of this agreement, that it will, upon request of the Buyer, assign and transfer to the Buyer (so far as and to the extent that the Seller shall have the right so to do) all rights of the Seller pertaining to the field of business herein agreed to be transferred to the Buyer in, to and under all patents which the Seller may hereafter acquire relating or applicable to the said field of business.

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"SCHEDULE A"

(1) Contract dated February 4, 1926 between The Telegraph Construction and Maintenance Company Limited and Western Electric Company, Incorporated, relating to continuously loaded submarine telegraph cables;

(2) Contract dated January 19, 1926 between Western Electric Company, Incorporated and Felton & Guilleaume Carlswerk Aktien Gesellschaft, relating to continuously loaded submarine telegraph cables;

[fol. 3475] (3) Contract dated April 20, 1926 between Western Electric Company, Incorporated and The Vitaphone Corporation, relating to electrical recording and reproduction of sound and the synchronization thereof with the taking or reproduction of motion pictures;

(4) Contract dated March 18, 1925 between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to apparatus for the electrical recording of sound;

(5) Contract dated May 1, 1925 between Victor Talking Machine Company and International Western Electric Company, Incorporated (and duly assigned by the latter to Western Electric Company, Incorporated) relating to apparatus for the electrical recording of sound;

(6) Contract dated June 26, 1925, between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(7) Contract dated July 19, 1926 between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(8) Contract dated May 1, 1925 between The Gramophone Company, Limited and International Western Electric Company, Incorporated (and duly assigned by the latter to Western Electric Company, Incorporated), relating to the electrical recording of sound;

[fol. 3476] (9) Contract dated January 19, 1926 between Western Electric Company, Incorporated and The Gramophone Company, Limited, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(10) Contract dated February 26, 1925 between Western Electric Company, Incorporated and Columbia Phonograph

Company, Incorporated, relating to apparatus for the electrical recording of sound;

(11) Contract dated April 22, 1925 between Columbia Graphophone Company, Limiited and International Western Electric Company, Incorporated (and duly assigned by the latte to Western Electric Company, Incorporated) relating to apparatus for the electrical recording of sound.

[fol. 3477] In addition to the above portions of the contract quoted in full, the remaining portions of the contract in brief are as follows:

Article I

Section 1 defines "Bell System Business" as all business of every description of the seller directly or indirectly with the companies comprising the Bell System, as the same is now or hereafter conducted. Section 2 defines Bell System. Section 3 defines "Graybar Business" to be all business of every description of the seller directly or indirectly with or for Graybar Electric Company, Inc., as the same is now or may hereafter be conducted. Section 4 defines "International Business" as all business of every description of the seller directly or indirectly with or for the International Telephone and Telegraph Company or International Standard Electric Corporation, as the same is now or may hereafter be conducted. Section 5 defines "Canadian Business" as all business now or at any time hereafter transacted by the seller in or with firms or corporations domiciled in Canada or Newfoundland. Section 6 defines "Patents" to include all rights in respect of inventions, whether for the United States or other countries. Section 7 provides that where any property assigned to the buyer under the terms hereof is inseparable from property to be retained by seller under the terms hereof, the seller retains legal title for the benefit of buyer and seller. Section 8 provides that where patents covered by the contract are applicable to the fields of business of the buyer and that reserved to the seller, the party holding [fol. 3478] legal title thereto grants to the other party exclusive licenses for the field of business of such other party; and for action to be brought by such party.

Article II

Section 1 printed in full above. Section 2 provides that where contracts are to be assigned attempts will be made to secure consent of other parties, and, if not, buyer shall be entitled to the profits therefrom. Section 3. Seller specifically reserves to itself all its Bell System business, Graybar business, International business and Canadian business, and all business with the following customers: (a) such companies now or hereafter designated or known as Bell Connecting Companies as the seller may from time to time exclude from the provisions of its contract with Graybar; (b) companies other than Bell System and Bell Connecting Companies operating public communication service with which seller may at any time during the term of the contract enter into continuing contracts to supply its manufactures; (c) United States Government; (d) manufacturers who may from time to time purchase seller's apparatus for incorporation in apparatus manufactured by such other manufacturers for sale either to the seller only or to the seller and other customers; and (e) employees of the seller and its subsidiaries and employees of companies comprising the Bell System. Section 4. As and when the existing obligations of seller with reference to its Graybar, International or Canadian business are terminated, the seller shall transfer to buyer such parts of such businesses as seller may elect to sell at a price to be mutually agreed upon or determined by arbitration. Sec- [fol. 3479] tion 5. Seller specifically reserves right to make sales direct to customers in special cases deemed by it desirable but shall paid to buyer profit that latter would have derived in case it had made such sale. Section 6. Agreement subject to all contracts and obligations of seller and seller reserves rights necessary to enable it to carry out said contracts except in so far as they are transferred to buyer. Section 7. Seller reserves the right to modify its existing contractual relations with respect to the business reserved and to either enlarge or restrict the character and extent of same; and upon such enlargement or restriction seller shall pay to buyer or buyer to seller such compensation therefor as may be mutually agreed upon or determined by arbitration. Section 8. Buyer agrees to carry out the obligations of seller in connection with con-

tracts, business or other assets transferred to buyer. Section 9 provides for reimbursement for taxes to seller in those cases paid on investments transferred to buyer.

Article III

Section 1 quoted in full above. Section 2 provides that the buyer shall, subject to the provisions of this article, assign to seller all rights pertaining to the field reserved to the seller, to all patents which buyer may hereafter acquire relating to such field of business. Section 3. Patents acquired by either party subject to any conditions shall be subject to transfer to the other party only upon the assumption by the other party of all conditions, obligations and restrictions, and royalties. Section 4. Each party agrees to exchange information with the other relat- [fol. 3480] ing to inventions, apparatus, systems, materials and processes applicable to the field of the other party. Section 5. Each party agrees to furnish to the other, upon request, all services, apparatus, material and merchandise relating to other respective fields which they may be in a position to perform; all services to be paid for at cost and all apparatus at prices and terms as favorable as those to other customers. Section 6. Seller reserves and buyer agrees to assign to the seller any and all patents which it may hereafter acquire and all right, title and interest for businesses and fields similar to or of the same character as the seller's Bell System business or Graybar business. Section 8. Buyer agrees that it will first obtain the approval of the seller before granting licenses or rights to others for methods or processes of manufacture.

Article IV

Section 1. Buyer agrees to issue and deliver to seller certificates representing 750,000 shares of stock without par value in consideration of the cash payment provided for in the contract and the business, property, effects, assets, rights, licenses and good will to be transferred to the buyer. Section 2. Documents of transfer provided for. Section 3. Arbitration provided for. Section 4. The date of the sale of the business covered by this agreement shall be January 1, 1927. Section 5. Construction of contract to be in accordance with the laws of the State of New York.

[fol. 3481] DEPOSITION EXHIBIT No. 5

Chart, Testified to by Witness Blair-Smith, Which Shows the Number of Employees as of January 1 of Each Year of the Treasury Department of the A. T. & T. Co.

12/23/31.

American Tel. & Tel. Co.

Treasury Department

Number of Employees as of January 1st of Each Year

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1 General Statistical			3	4	7	8	11	14	14
2 Methods }	12	20	9	10	12	15	19	28	26
3 Results }									
4 Office Service			14	13	15	16	16	18	20
5 Mail & Files	12	14	21	18	19	18	23	25	27
6 Stenographic	7	13	18	20	20	20	26	33	35
Total Adm	31	47	65	65	73	77	95	118	122
7 Transfer Bureau	52	36	51	37	43	42	57	101	84
8 Stock Record "	104	81	86	76	77	80	100	106	126
9 Empl. Stock "	9	6	3	..	..	..	..	..	15
10 Boston Office	55	55	20	19	19	18	17	22	22
Total	220	178	160	132	139	140	174	229	247
11 Securities Records Section				6	6	7	7	7	8
12 Cashier's Section	12	13	12	13	13	12	12	17	19
13 Dividend & Coupon Section	49	37	27	25	24	19	19	17	17
14 Bell Securities Section	..	..	5	6	7	7	7	17	19
Total	61	50	44	50	50	45	45	58	63
Grand Total	312	275	269	247	262	262	314	405	432

These totals do not include the Treasurer.

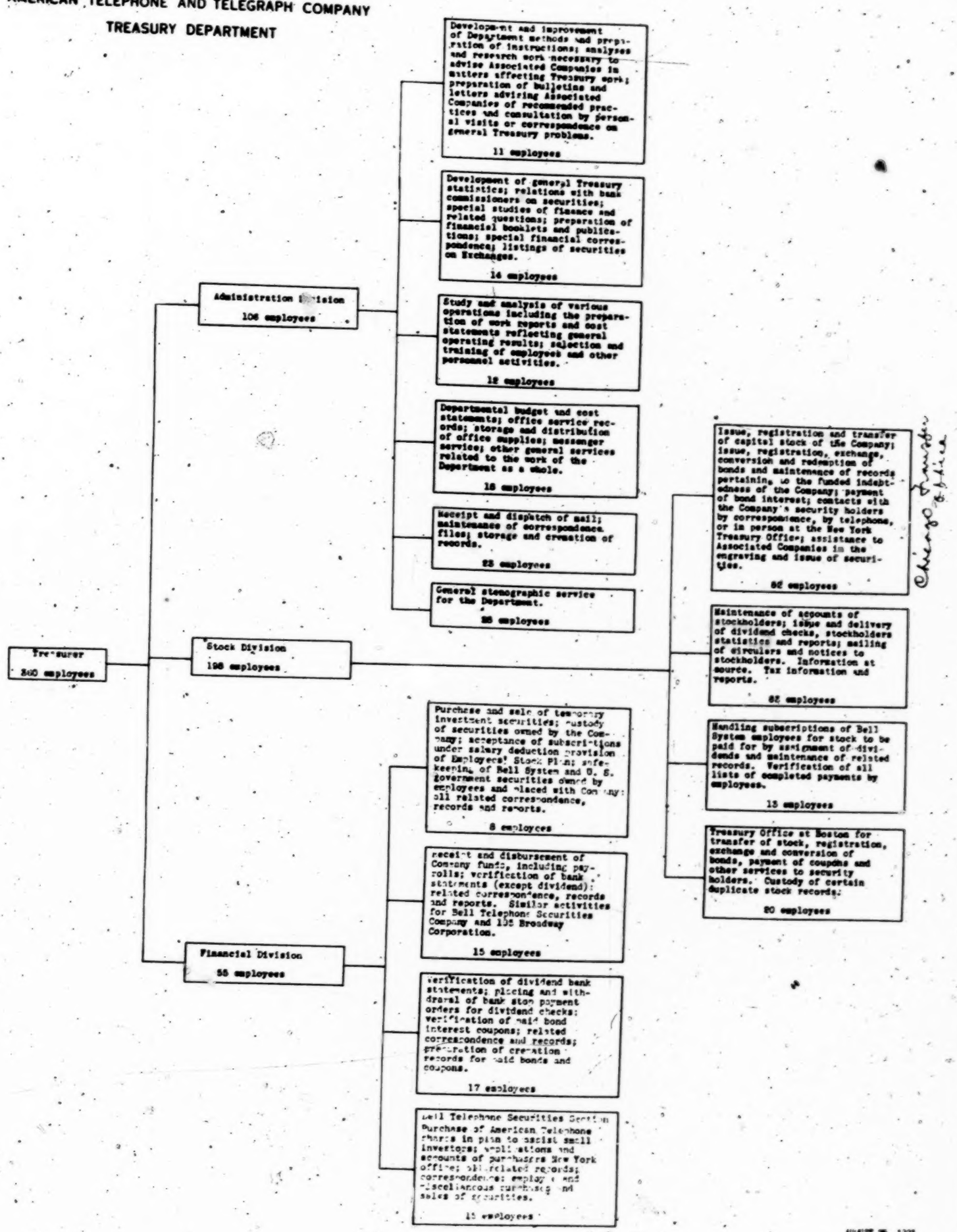
Dec. 23, 1931.

(Here follows Deposition Exhibit No. 6, side folios 3482)

DEFENDANT'S EXHIBIT 6

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TREASURY DEPARTMENT



Chicago Branches

AUGUST 25, 1931

[fol. 3483] DEPOSITION EXHIBIT #7

Document Testified to by Witness Blair-Smith, Consisting of Several Typewritten Pages, Dated April 30, 1931

Treasury Department

April 30, 1931.

Mr. H. Blair-Smith, Treasurer:

Attached are two statements marked "Exhibit A" and "Exhibit B" which distribute the expenses of the Treasury Department on two estimated bases between those chargeable to license contract and to other activities for the years 1923 to 1930.

The distribution of expenses (called Basis 1) shown in Exhibit A is based on charging security issue and 1930 bond conversion expenses to other activities of the Department, whereas the distribution (called Basis 2) shown on Exhibit B includes these expenses in license contract activities. The security issue and bond conversion expenses will be referred to hereafter in this memorandum as security issue expenses and will be understood to include such expenses as have been developed as being assignable to this classification in past reviews of departmental expenses, plus estimated indirect security issue expenses of the Administration Division.

A summary of these two estimates, which shows the effect of switching the security issue expenses of the department from one classification to the other, is given below:

Distribution of Treasury Department Expenses

Year	Total Expenses	Charged to License Contract Basis 1	% of Total	Security Issue Expenses	Charged to License Contract Basis 2	% of Total
1923	$954,861	$85,363.28	8.94	$74,255.17	$159,618.45	16.72
1924	1,258,097	123,204.82	9.79	389,093.71	512,298.53	40.72
1925	944,914	116,199.24	12.30	55,773.22	171,972.46	18.20
1926	1,381,752	127,102.47	9.20	444,595.79	571,698.26	41.37
1927	1,103,130	194,147.11	17.60	80,575.81	274,722.92	24.90
1928	1,648,226	193,428.92	11.74	588,071.13	781,554.05	47.42
1929	1,591,063	191,898.90	12.06	404,129.94	596,028.84	37.46
1930	2,499,674	337,044.00	13.48	979,305.64	1,316,349.64	52.66
	$11,381,717	$1,368,442.74	12.02	$3,015,800.41	$4,384,243.15	38.52

[fol. 3484] Allocation of Financial Division Expenses

With security issue costs left out of consideration, the expenses of the Financial Division chargeable to license contract activities are involved chiefly in the following:

a) The handling of temporary investments.

b) The paying of salaries and the performance of cash book and banking work for that part of General Department operations which are devoted to license contract services.

c) The making of advances to Associated Companies and the handling of their notes.

d) The handling of General Department employee stock subscriptions under the Employees' Stock Plan.

The distribution of Financial Division expenses between license contract and other activities has been based chiefly on an estimate furnished by the Comptroller's Department that 85% of the employees of the General Department were performing license contract services during the period in question. First, the estimated expenses of the Coupon and Dividend Sections and of the Bell Securities Section included in Financial Division expenses were eliminated for each year, since no part of the work of these sections was considered chargeable to license contract activities, and then 85% of the remaining annual expenses, were charged to license contract activities.

The following table shows how the expenses of the Financial Division have been distributed:

Distribution of Financial Division Expenses

Year	Total Expenses Excluding Security Issues	Expenses of Sections Eliminated	Balance to be Allocated	Expenses Charged to License Contract—85%	% of Total Expenses
1923.....	$90,759	$37,635	$53,124	$45,155.40	49.75
1924.....	123,066	47,110	75,956	64,562.40	52.46
1925.....	139,397	56,267	83,130	70,658.50	50.69
1926.....	139,451	56,200	83,251	70,763.35	50.74
1927.....	147,160	43,896	103,264	87,774.40	59.65
1928.....	150,587	45,457	105,130	89,360.50	59.34
1929.....	156,639	45,077	111,562	94,827.70	60.54
1930.....	182,907	52,846	130,061	110,551.85	60.44
	$1,129,966	$384,488	$745,478	$633,654.10	56.08

[fol. 3485] Allocation of Stock Division Expenses

With security issue costs left out of consideration, the expenses of the Stock Division chargeable to license contract activities are involved chiefly in the following:

a) The issuing of stock to employees under the Employees' Stock Plan.

b) The handling of subscriptions payable by the assignment of dividends in the Employees' Stock Bureau (1930 only).

It was decided that all of the expenses connected with the above work were chargeable to license contract activities except that proportion which could be estimated as applying to employees not working for Associated Companies or not otherwise concerned in license contract service. Accordingly, a deduction of 17.06% was made from the total estimated cost of this work based on leaving out of consideration employees of the following companies as indicated:

Western Electric Company	100%
Bell Telephone Securities Company	100%
195-205 Broadway Corporations	100%
Electrical Research Products Co.	100%
Bell Telephone Laboratories	70%
American Telephone and Telegraph Company—General Department	15%

Actual figures not being available with respect to the cost of issuing stock under the Employees' Stock Plan, the expenses of this work were estimated on a base rate of 67½¢ per certificate so issued. Then 17.06% was deducted from the total estimated cost of issuing certificates under the Employees' Stock Plan each year to determine the amount to be charged to license contract activities. The statement attached, marked "Exhibit C", indicates how the 17.06% was determined, how the estimated cost per certificate was built up, and how the cost of issuing certificates under the Employees' Stock Plan was calculated.

Similarly, to determine the proportion of the Employees' Stock Bureau expenses of 1930 to be charged against license contract activities, 17.06% was deducted from the total estimated expense of $80,000, and the balance was charged to license contract services in that year. The re-

maining normal expenses of the Stock Division were charged to other activities.

The following table shows how the expenses of the Stock Division have been distributed:

[fol. 3486] Distribution of Stock Division Expenses

Year	Total Expenses Excluding Security Issues	Expense to be Allocated	Expenses Charged to License Contract—82.94%	% of Total Expenses
1923	$697,854	$23,314.50	$19,336.73	2.77
1924	635,205	39,179.03	32,495.18	5.12
1925	581,636	9,997.43	8,291.70	1.43
1926	604,555	15,661.35	12,989.70	2.15
1927	624,091	44,863.88	37,210.05	5.96
1928	640,571	47,613.15	39,490.20	6.16
1929	720,548	31,112.10	25,804.57	3.58
1930	972,654	155,149.78	128,678.43	13.23
	$5,477,114	$366,891.22	$304,296.26	5.56

Allocation of Administration Division Expenses

With security issue costs left out of consideration, the expenses of the Administration Division chargeable to license contract activities are involved chiefly in the following:

a) Executive, administrative, and methods work allocated to the Financial and Stock Divisions, and in turn allocated to license contract activities.

b) Methods and development work in behalf of Associated Companies.

c) Cost of Bell System Treasurers' Conference (1927 only).

The following table shows how the expenses of the Administration Division have been distributed:

Distribution of Administration Division Expenses

Year	Total Expenses Excluding Direct Security Issues	Expenses Charged to License Contract	% of Total Expenses
1923	$110,748	$20,871.15	18.85
1924	133,308	26,147.24	19.61
1925	202,381	37,249.04	18.40
1926	232,529	43,349.42	18.64
1927	302,538	69,162.66	19.89
1928	323,839	64,632.22	19.96
1929	372,896	71,266.63	19.11
1930	439,183	97,814.02	22.27
	$2,117,422	$430,492.38	19.91

[fol. 3487] There being no clear-cut accounting lines between the various types of Administration Division work, allocation of expenses between license contract and other activities had to be accomplished on an estimated basis. The percentages used in this allocation were determined on the basis of the eight year period as a whole and then these percentages were applied to the expenses of the Administration Division for each year.

First, the expenses were divided on an estimated basis between the various components of the Administration Division, and this was done as follows:

	Administration Expenses
Executive	25%
Methods and Results	25
General Statistical	12
Office Service	10
Mail and Files	11
Stenographic	17
	100%

This division having been made, it was necessary to allocate a portion of each one of these components according to what appeared to be chargeable to the Financial Division, to the Stock Division, to Associated Companies, to security issue work, and to purely non-license activities. The manner in which this allocation was made is indicated in the statement attached, marked "Exhibit D."

The amount of Administration Division expense allocated to each of the other divisions was then further subdivided to determine the proportion pertaining to their license contract activities. For the Financial Division, license contract was charged with the proportion that (a) the amount of Financial Division expenses charged to license contract in 1930 bore to (b) the combined total of the normal expenses of the Division for 1930, including those of the Coupon and Dividend Section and the Bell Securities Section. For the Stock Division, the distribution was made in the proportion in which the expenses of that Division were divided between "License Contract" and "Other", security issue expenses having been previously

deducted. These apportionments are shown on the statement attached, marked "Exhibit E".

Allocation of Security Issue Expense for Basis 2

In determining the direct security issue and bond conversion expenses of the Department there was considered only that proportion of the Department's total expense which had been estimated from year to year to be in excess of the normal amount the Department would have ex- [fol. 3488] pended for its current work. In other words no allowance was made for the time spent directly on security issue work by permanent employees except in so far as it was found necessary to replace these members of the Department with temporary employees; nor was allowance made for crowding security issue activities to some extent into the regular space occupied by the Department. An estimate was made, however, of the amount of time spent by the Administration Division upon the preparation of methods and plans for security issues and for actual participation of staff employees in security issue work, and this has been added to the security issue cost in Basis 2, as indicated in the following table:

Allocation of Security Issue Expenses

Year	Direct Security Issue Expense	Expenses of Adm. Div. Charged to Security Issue	Total Security Issue Expense Charged to License Contract—Basis 2
1923	$55,500.00	$18,755.17	$74,255.17
1924	366,518.00	22,575.71	389,093.71
1925	21,500.00	34,273.22	55,773.22
1926	405,217.00	39,378.79	444,595.79
1927	29,341.00	51,234.81	80,575.81
1928	533,229.00	54,842.13	588,071.13
1929	340,980.00	63,149.94	404,129.94
1930	904,930.00	74,375.64	979,305.64
	$2,657,215.00	$358,585.41	$3,015,800.41

(Signed) C. S. Van Cise, Assistant Treasurer.

CVC:LM:

(Here follow Exhibits A and B, side folios 3489 and 3490)

[fol. 3489]

EXHIBIT "A"

American Telephone and Telegraph Company

(Excluding Long Lines Department)

Apportionment of Departmental Expenses Between (a) Those Related to the Furnishing of License Contract Services and (b) Those Comprising Other Expenses of the Company – Years 1923 to 1930

Treasury Department

Year	Total Departmental Expense (1)	Specifically Allocated: License Contract (2)	Specifically Allocated: Other (3)	Amount not Specifically Allocated (Apportioned on Basis of Study): Total (4)	License Contract: Amount (5)	License Contract: % of (4) (6)	Other: Amount (7)	Other: % of (4) (8)	Total: License Contract: Amount (9)	Total: License Contract: % of (1) (10)	Total: Other: Amount (11)	Total: Other: % of (1) (12)
1923	$954,861.40		S.I. $55,500.00	$899,361.40	A. $20,871.15 F. 45,155.40 S. 19,336.73 $85,363.28	9.49	S.I.I. $18,755.17 B. 795,242.95 813,998.12	90.51	$85,363.28	8.94	$869,498.12	91.06
1924	1,258,096.79		S.I. 366,518.00	891,578.79	A. $26,147.24 F. 64,562.40 S. 32,495.18 $123,204.82	13.82	S.I.I. $22,575.71 B. 745,798.26 $768,373.97	86.18	123,204.82	9.79	1,134,891.97	90.21
1925	944,914.08		S.I. 21,500.00	923,414.08	A. $37,249.04 F. 70,658.50 S. 8,291.70 $116,199.24	12.58	S.I.I. $34,273.22 B. 772,941.62 807,214.84	87.42	116,199.24	12.30	828,714.84	87.70
926	1,381,751.46		S.I.405,217.00	976,534.46	A. $43,349.42 F. 70,763.35 S. 12,989.70 $127,102.47	13.02	S.I.I. $39,378.79 B. 810,053.20 $849,431.99	86.98	127,102.47	9.20	1,254,648.99	90.80
1927	1,103,129.94		S.I. 29,341.00	1,073,788.94	A. $69,162.66 F. 87,774.40 S. 37,210.05 $194,147.11	18.08	S.I.I. $51,234.81 B. 828,407.02 $879,641.83	81.92	194,147.11	17.60	908,982.83	82.40
1928	1,648,225.86		S.I.533,229.00	1,714,996.86	A. $64,632.22 F. 89,360.50 S. 39,490.20 $193,482.92	17.35	S.I.I. $54,842.13 B. 866,671.81 921,513.94	82.65	193,482.92	11.74	1,454,742.94	88.26
1929	1,591,062.78		S.I.$33,177.00 B.I.307,803.00 $340,980.00	1,250,082.78	A. $71,266.63 F. 94,827.70 S. 25,804.57 $191,898.90	15.35	S.I.I. $63,149.94 B. 995,033.94 1,058,183.88	84.65	191,898.90	12.06	1,399,163.88	87.94
1930	2,499,673.64		B.C.$269,105.00 S.I. 635,825.00 $904,930.00	1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.13 $337,044.00	21.13	S.I.I. $74,375.64 B.1,183,324.00 $1,257,699.64	78.87	337,044.00	13.48	2,162,629.64	86.52
	$11,381,715.95		$2,657,215.00	$8,724,500.95	$1,368,442.74	15.69	$7,356,058.21	84.31	$1,368,442.74	12.02	$10,013,273.21	87.98

Notes: * Includes $8,983.60, Cost of Bell System Treasurers' Conference.

S.I. Stock Issue
B.I. Bond Issue
B.C. Bond Conversion
A. Administration Division
F. Financial Division
S. Stock Division
S.I.I. Stock Issue Indirect
B. Balance

[fol. 3490]

EXHIBIT "B"

American Telephone and Telegraph Company

(Excluding Long Lines Department)

Apportionment of Departmental Expenses Between (a) Those Related to the Furnishing of License Contract Services and (b) Those Comprising Other Expenses of the Company—Years 1923 to 1930

Treasury Department

Year	Total Departmental Expense (1)	Specifically Allocated: License Contract (2)	Specifically Allocated: Other (3)	Amount not Specifically Allocated (Apportioned on Basis of Study): Total (4)	License Contract: Amount (5)	License Contract: % of (4) (6)	Other: Amount (7)	Other: % of (4) (8)	Total: License Contract: Amount (9)	Total: License Contract: % of (1) (10)	Total: Other: Amount (11)	Total: Other: % of (1) (12)
1923	$954,861.40	S.I. $55,500.00		$889,361.40	A. $20,871.15 F. 45,155.40 S. 10,299.73 S.I.I. 18,755.17							
					$104,118.45	11.58	B. $795,242.95	88.42	$159,618.45	16.72	$795,242.95	83.28
1924	1,258,096.79	S.I. 366,518.00		891,578.79	A. $26,147.24 F. 64,562.40 S. 32,495.18 S.I.I. 22,575.71							
					$145,780.53	16.35	B. 745,798.26	83.65	512,298.53	40.72	745,798.26	59.28
1925	944,914.08	S.I. 21,500.00		923,414.08	A. $37,249.04 F. 70,658.50 S. 8,291.70 S.I.I. 34,273.22							
					$150,472.46	16.29	B. 772,941.62	83.71	171,972.46	18.20	772,941.62	81.80
1926	1,381,751.46	S.I. 405,217.00		976,534.46	A. $43,349.42 F. 70,763.35 S. 12,989.70 S.I.I. 39,378.79							
					$166,481.26	17.05	B. 810,053.20	82.95	571,698.26	41.37	810,053.20	58.63
1927	1,103,129.94	S.I. 29,341.00		1,073,788.94	A. $69,162.66 F. 87,774.40 S. 37,210.05 S.I.I. 51,234.81							
					$245,381.92	22.85	B. 823,407.02	77.15	274,722.92	24.91	828,407.02	75.09
1928	1,648,225.86	S.I. 533,229.00		1,114,996.86	A. $64,632.22 F. 89,360.50 S. 39,490.20 S.I.I. 54,842.13							
					$248,325.05	22.27	B. 866,671.81	77.73	781,554.05	47.42	866,671.81	52.58
1929	1,591,062.78	S.I. $33,177.00 B.I. 307,803.00 $340,980.00		1,250,082.78	A. $71,266.63 F. 94,827.70 S. 25,804.57 S.I.I. 63,149.94							
					$255,048.34	20.40	B. 995,033.94	79.60	596,028.84	37.46	995,033.94	62.54
1930	2,499,673.64	B.C. $269,105.00 S.I. 635,825.00		1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.12							

1930.....	2,499,673.64	B.C.$269,105.00 S.I. 635,825.00 904,930.00		1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.13 S.I.I. 74,375.64							
					$411,419.64	25.30	B.1,183,324.00	74.20	1,316,349.64	52.66	1,183,324.00	47.34
	$11,381,715.95	$2,657,215.00		$8,724,500.95	$1,727,028.15	19.80	$6,997,472.80	80.20	$4,384,243.15	38.52	$6,997,472.80	61.48

Notes: * Includes $8,983.60, Cost of Bell System Treasurers' Conference.

S.I. Stock Issue
B.I. Bond Issue
B.C. Bond Conversion
A. Administration Division
F. Financial Division
S. Stock Division
S.I.I. Stock Issue Indirect
B. Balance

[fol. 3491]

EXHIBIT "C"

American Telephone and Telegraph Company

Treasury Department

Total Employee Stock Certificates Issued in 1930	Certificates Issued to Employees of Companies to be Eliminated							
	A. T. & T. Co. Gen'l. Dept.	195 B'way Corp.	Bell Lab.	Western Electric	Bell Sec.	Electrical Research	Total	% of Total
	15%	100%	70%	100%	100%	100%		
111,333	231	70	1,160	17,537	.....	.....	18,998	17.06

Estimated Cost of Issuing One Certificate of A. T. & T. Co. Stock Under the Employees' Stock Plan

Labor Cost of preparing register and certificate; forwarding certificate to Registrar and Stock Division overhead and supervision	$.22
Form of Certificate	.105
Other stationery, forms, and postage used throughout Bell System in connection with Employees' Stock Plan	.19
Registration	.115
Listing on New York, Boston and Philadelphia Stock Exchanges (average of 3 shares a certificate)	.045
Total Cost used as a Base Rate a certificate	$.675

Tax 5c a share.

Cost of Issuing Certificates Under the Employees' Stock Plan

Year	Total Certificates Issued	Estimated Total Cost of Issuing Certificates at $.675 each	Deductions, not Charged to License Contract 17.06%	Expenses Charged to License Contrac 82.94%
1923	34,540	$23,314.50	$3,977.77	$19,336.73
1924	58,043	39,179.03	6,683.85	32,495.18
1925	14,811	9,997.43	1,705.73	8,291.70
1926	23,202	15,661.35	2,671.65	12,989.70
1927	66,465	44,863.88	7,653.83	37,210.05
1928	70,538	47,613.15	8,122.95	39,490.20
1929	46,092	31,112.10	5,307.53	25,804.57
1930	111,333	75,149.78	12,823.65	62,326.13
Total	425,024	$286,891.22	$48,946.96	$237,944.26

Date issued: April 17, 1931.

[fol. 3492]

Statement No. 4

American Telephone and Telegraph Company

Treasury Department

Analysis of Administration Division Expense

	Cost in % of Total (1)	% Chargeable to Stock Div. (2)	% Factor (3) (1) x (2)	% Chargeable to Fin. Div. (4)	% Factor (5) (1) x (4)	% Chargeable to "Other" (6)	% Factor (7) (1) x (6)	Total of Per Cents (8)	Total of % Factors (9) (1) x (8)
Executive	25	25	6.25	50	12.50	25	6.25	100	25.00
Methods and Results	25	20	5.00	10	2.50	70	17.50	100	25.00
Office Service Staff	10	55	5.50	15	1.50	30	3.00	100	10.00
General Statistical	12	10	1.20	10	1.20	80	9.60	100	12.00
Mail and Files	11	65	7.15	15	1.65	20	2.20	100	11.00
Stenographic	17	45	7.65	10	1.70	45	7.65	100	17.00
Total of Factors	100	..	32.75	..	21.05	..	46.20	...	100.00

Analysis of "Other" Shown Above

	Security Issue			Associated Companies			Departmental Administration		
	% of "Other" (1)	Factor (2)	% of Total Admin. Div. (3) (1) x (2)	% of "Other" (4)	Factor (5)	% of Total Admin. Div. (6) (4) x (5)	% of "Other" (7)	Factor (8)	% of Total Admin. Div. (9) (7) x (8)
Executive	30	6.25	1.875	40	6.25	2.500	30	6.25	1.875
Methods and Results	50	17.50	8.750	25	17.50	4.375	25	17.50	4.375
Office Service Staff	15	3.00	.450	..	3.00	.....	85	3.00	2.550
General Statistical	20	9.60	1.920	10	9.60	.960	70	9.60	6.720
Mail and Files	40	2.20	.880	..	2.20	.....	60	2.20	1.320
Stenographic	40	7.65	3.060	..	7.65	.....	60	7.65	4.590
Total of Factors	..	46.20*	16.935	..	46.20*	7.835	..	46.20*	21.430

Chargeable to	% of Total Factors
Security Issue	16.935
Associated Companies	7.835
Departmental Administration	21.43
	46.20*

(Here follows side folio 3493)

[fol. 3493]

EXHIBIT "E"

American Telephone and Telegraph Company

Treasury Department

Analysis of Administration Division Expenses

Year (1)	Total Administration Division Normal Expenses (2)	Allocated to Fin. Div. 21.05%		Allocated to Stock Div. 32.75%			Allocated to			Total to License Contract	
		Total Amount (3)	Proportion Charged to License Contract 48% (4)	Total Amount (5)	Proportion Charged to License Contract		Security Issue 16.935% (8)	License Contract 7.835% (9)	Other 21.43% (10)	Basis 1 (11) (4+6+9)	Basis 2 (12) (11+8)
					Amount (6)	% (7)					
1923	$110,748	$23,312.45	$11,189	$36,269.97	$1,005.04	2.77	$18,755.17	$8,677.11	$23,733.30	$20,971.15	$39,626.32
1924	133,308	28,061.33	13,469	43,658.37	2,233.56	5.12	22,575.71	10,444.68	28,567.91	26,147.24	48,722.95
1925	202,381	42,601.20	20,448	66,279.78	944.49	1.43	34,273.22	15,856.55	43,370.25	37,249.04	71,522.26
1926	232,529	48,947.35	23,495	76,153.25	1,635.77	2.15	39,378.79	18,218.65	49,830.96	43,349.42	82,728.21
1927	302,538	63,684.25	30,568	99,081.20	5,907.21	5.96	51,234.81	32,687.45	64,833.89	69,162.66	111,414.41
1928	323,839	68,168.11	32,721	106,057.27	6,538.43	6.17	54,842.13	25,372.79	69,398.70	64,632.22	119,474.35
1929	372,896	78,494.61	37,677	122,123.44	4,373.23	3.58	63,149.94	29,216.40	79,011.61	71,266.63	134,416.57
1930	439,183	92,448.02	44,375	143,832.43	19,029.03	13.23	74,375.64	34,409.99	94,116.92	97,814.02	172,189.66
Total	$2,117,422	$445,717.32	$213,942	$693,455.71	$41,666.76	6.01	$358,585.41	$174,883.62	$453,763.54	$430,492.38	$780,094.73

Note: *Includes $8,983.60, Cost of Bell System Treasurers' Conference.

[fol. 3494] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 8

Issue of October, 1930, Bell Telephone Quarterly: Article Contained on Page 250 Thereof Written by Witness Blair-Smith. 1930 Stock Offer of The American Telephone and Telegraph Company

In a circular letter dated April 16, 1930, the American Telephone and Telegraph Company announced an offer to stockholders of record at the close of business on May 23, 1930, of additional shares of stock at par, $100, in the proportion of one new share for each six shares then held. Rights to subscribe expired on August 1, 1930. The terms of the offer were similar to those of the offer in 1928. The issue, as usual, was not underwritten.

Debenture Bonds of 1939 Largely Converted

The terms of the offer provided a period of approximately five weeks, longer than usual, between the announcement date and the record date for subscription rights. This longer period was provided so that holders of the Ten-Year Convertible 4½% Gold Debenture Bonds (offered for subscription to the stockholders in 1929) who might desire to convert their bonds into stock in time to receive subscription rights, might have ample opportunity to act. Between the announcement date and the record date more than $132,000,000 principal amount of the convertible bonds, or sixty percent of the issue, were converted into an equal amount of stock which was entitled to subscription rights.

Purpose of the Issue

The purpose of the issue, as stated by President Gifford, was to provide funds for new construction needed by the Bell System to care for additional business resulting from the constantly greater use of telephone service.

The amount of stock offered was $257,940,700 at par, [fol. 3495] being about 39 percent more than in the 1928 issue. Stockholders receiving rights numbered 508,764. The average amount offered was approximately $500 per stockholder. * * *

Table I

Comparative Statistics of the 1930 and 1928 Stock Issues
(1930 Figures Partly Estimated)

	1930 Stock Issue	1928 Stock Issue	Increase 1930 over 1928
Par value of stock offered	$257,940,700	$185,863,000	38.8%
Stockholders on record date	508,764	432,004	17.8%
Market value of a share on closing date for subscriptions	$209⅝	$176	$33⅝

Local Contacts with Subscribers

Stockholders throughout the country were aided as before in the purchase and sale of rights by the Bell Telephone Securities Company which offered its facilities at about 3,000 of the business offices of the Associated Companies.

In addition to arranging rights purchase and sale transactions, the Associated Companies again received subscriptions at their business offices for forwarding to the American Company and more than 52,000 subscriptions were thus handled.

The following table gives certain data concerning the number of rights purchase and sale transactions and subscriptions arranged by the Associated Companies for their patrons.

[fol. 3496]

Table III

1930 Stock Issue Transactions Handled Locally by Associated Companies for their Patrons

Associated Companies	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Percent of Stockholders Resident in the Territory	Number of Transactions	In Percent of Stockholders Resident in the Territory
New England Tel. & Tel. Co	1,857	1.7%	1,718	1.5%
Southern New England Tel. Co	771	5.1	389	2.6
New York Tel. Co	12,616	12.9	6,743	6.9
New Jersey Bell Tel. Co	3,352	11.4	1,660	5.6
Bell Tel. Co. of Penn	10,745	23.4	5,164	11.2
Chesapeake and Potomac Tel. Co	4,614	23.0	2,397	11.9
Southern Bell Tel. & Tel. Co	3,703	20.5	1,656	9.1
Michigan Bell Tel. Co	3,505	41.8	1,198	14.3
Indiana Be.. Tel. Co	1,084	37.3	255	8.8
Wisconsin Tel. Co	4,108	46.0	1,693	18.9
Illinois Bell Tel. Co	16,310	33.3	7,662	15.6
Northwestern Bell Tel. Co	5,691	44.5	2,528	19.7
Southwestern Bell Tel. Co	10,650	47.4	5,236	23.3
Mountain States Tel. & Tel. Co	3,639	36.1	2,163	21.5
Pacific Tel. & Tel. Co	16,563	41.1	12,395	30.8
Total	99,208	20.1%	52,857	10.7%

Conclusion

More stockholders participated in the issue than in any previous offering by the American Telephone and Telegraph Company; the amount of the offer was larger than any heretofore made and the percentage of rights unused was the smallest.

The employees throughout the country engaged in the work showed great interest in rendering their best service and the work was done expeditiously and efficiently. Stockholders in many sections generously commended the services rendered them. The wholehearted co-operation of all made the issue a most successful one in all of its aspects.

[fol. 3497] Deposition Exhibit #9

Article contained on pp. 316-327 of Bell Telephone Quarterly, Entitled "1929 Convertible Bond Offer of A. T. & T.", Written and Testified to by Witness Blair-Smith.

The American Telephone and Telegraph Company offered to its 455,000 stockholders of record on May 10,

1929, $219,112,700 of Ten-Year Convertible 4½% Gold Debenture Bonds due July 1, 1939, in the proportion of $100 principal amount of bonds for each six shares then held. The bonds were offered for subscription at face value and payment in full was due July 1, 1929. The offer was not underwritten.

The principal amount of the issue, $219,112,700, represents the largest financing ever undertaken by the Bell System, and is believed to be the largest ever offered to stockholders for subscription by any corporation; the 1928 stock offer of the American Company amounting to about $185,000,000 doubtless having previously held the record. If all of the bonds should be converted into stock at $180 per share during 1930 under Option (a), the Company would receive an additional $175,000,000 or a grand total of nearly $400,000,000.

The purpose of the offering was to provide funds for the payment of approximately $75,000,000 Collateral Trust Four Per Cent. Bonds of the Company maturing July 1, 1929, and for new construction which is required by the Bell System to care for additional business resulting from the continuously increasing use of telephone service. In the current year more than $550,000,000 will be spent on plant additions, betterments and replacements. This is the largest program in the history of the Bell System and similar large expenditures are planned for the years to follow.

[fol. 3498] Terms of the Issue

The bonds are convertible into stock of the Company during the period January 1, 1930 to December 31, 1937 at the conversion price of not more than $180 per share for the year 1930, $190 per share for the years 1931 and 1932 and $200 per share for the remainder of the period, provided, however, that bonds called for redemption on any date within the conversion period may be surrendered for stock not later than their redemption date. The conversion prices are subject to reduction upon the issue from time to time of additional stock by the Company in accordance with the terms of the indenture. In converting, the bondholder may take (a) one share of stock for each $100 principal amount of bonds surrendered, on payment in cash of the difference between the conversion price then in effect and

$100, or (b) he may take as many shares of stock as the principal amount of bonds surrendered is a multiple of the conversion price then in effect, and if there is a remainder the bondholder may take one additional share on payment in cash of the difference between the current conversion price and such remainder. When the bonds are selling at a market price above their principal amount it will usually be advantageous to the bondholder to convert under Option (a).

Results of the Issue

In recent months, the general investing public has shown a slackened interest in bonds except those with stock privilege features. Convertible bonds have proven quite attractive however, and this fact contributed to the marked success of the convertible bond offering of the American Company. A total of 165,000 subscriptions was received, exceeding that for any previous Bell System bond issue. In addition there were many subscriptions filed by banks and brokers for individual investors which cannot be identified as such and are accordingly excluded from the count. [fol. 3499] Only one-half of one percent of the rights was allowed to lapse. These are satisfactory results, especially when it is considered that of the 455,000 stockholders entitled to subscribe, relatively few had had previous experience with convertible bond offers.

Due to the changing conditions in the securities market, which had their effect on American Telephone stock and thus on the rights, the price of the latter exhibited rather marked variations during the subscription period. The day of the announcement of the issue, April 30, rights sold as high as $7\frac{7}{8}$. During May the general price trend was downward and a low of $3 was reached on several days at the end of the month. June witnessed a reversal in trend, the price rising to a high of $8 on June 29, with a final price on the New York Stock Exchange of $7\frac{7}{8}$.

As has always been the case when the American Company offers securities to stockholders, the bulk of the subscription payments is received at the very end of the period. Banks and brokers especially, making payment for their own and for their clients' accounts, observe this practice in order to save interest. Of a total of $218,000,000 received,

only $35,000,000 had reached the Company and been deposited by June 27, four doys before the expiration date. On July 1 alone, over $106,000,000 was received and deposited.

To add to that day's volume of business the Treasurer's Office issued checks for $60,000,000 in payment of Collateral Trust Four Per Cent. Bonds maturing then and presented on or before July 1 and also $2,730,000 in payment of bond coupons due July 1. That part of the proceeds of the convertible bonds not required for immediate use was invested in short term securities of unquestionable safety, principally government and municipal obligations.

A résumé of the results of the bond issue is set forth in the following table:

[fol. 3500] Table I

Statistics on the 1929 Convertible Bond Issue

Principal amount of bonds offered	$219,112,700
Approximate amount of bonds subscribed	$218,000,000
Percent subscribed	99½%
Number of stockholders of record	455,160
Approximate number of subscriptions	165,000
Subscriptions in percent of stockholders	36%
Average principal amount offered, per stockholder	$481
Average principal amount per subscription	$1,314

Aid Given Stockholders

In accordance with the Company's policy of endeavoring to offer special assistance to those of its stockholders who seemed most likely to require it, individually addressed letters were sent on May 22 to 8,000 individuals entitled to subscribe who had failed to exercise their rights to the 1928 stock issue. The communication explained that the 1929 rights had value and that they should either be used in subscription or be sold for cash by July 1. These stockholders had, of course, already been sent the circular of April 30 announcing and giving full details of the terms of the offer and also the circular of the Bell Telephone Securities Company which accompanied the warrants mailed on May 20 to all stockholders. The latter communication included a list of simplified questions and answers about the issue and

an order form to facilitate the purchase or sale of rights through the Bell Telephone Securities Company.

As in the case of the 1928 stock issue, the Associated Companies were furnished with the names and addresses of those of the 8,000 stockholders who lived in their territory, and attempts were made to reach these individuals personally before the close of the subscription period. In cases where a telephone communication was insufficient, a fuller explanation was given in a personal interview by a Company representative. These stockholders were, with few exceptions, of limited means and the ones who could least afford to sacrifice the value of their rights.

[fol. 3501] Through these varied means, the interests of thousands of stockholders were protected, and as had been the previous experience, many of them expressed their appreciation for the assistance received.

Other Assistance Rendered

Over 385,000 stockholders or 85 percent of the total stock list received fractional warrants, some with and some without full warrants, and all of these fractional warrants had to be pieced out in order that they might be utilized in subscription, or which could be sold. In order to facilitate these transactions for the stockholders residing in all parts of the country, the Bell Telephone Securities Company as in the past offered its facilities for the purchase or sale of rights and the filing of subscriptions both at its home office and through most of the business offices of the Associated Companies.

Transactions in rights in the field averaged about 7½ rights, while subscriptions filed averaged about $425. An idea of the extent to which these facilities were utilized may be gained by the fact that of a total of 154,000 transactions for the purchase and sale of rights effected through the Securities Company, 103,000 were handled through the field. The latter figure compares with about 76,000 transactions so handled in the field during the 1928 stock issue and represents more than a one-third increase in activity. In addition over 31,000 completed subscription transactions were handled through the Associated Companies. The stockholders in the western states, as was the case last year,

were the ones who availed themselves most largely of the facilities offered through the Associated Companies.

The following table gives data on rights purchases and sales and subscriptions filed through the Associated Companies rendering aid during the bond issue.

[fol. 3502] Table II

1929 Bond Issue Transactions Handled Locally by Associated Companies for Their Patrons

Associated Companies	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Percent of Stockholders Resident in the Territory	Number of Transactions	In Percent of Stockholders Resident in the Territory
New England Tel. & Tel. Co.	3,072	3.0	1,106	1.1
Southern New England Tel. Co.	800	5.7	165	1.2
New York Tel. Co.	12,011	14.2	3,629	4.3
New Jersey Bell Tel. Co.	3,188	12.2	818	3.1
Bell Tel. Co. of Penn.	11,642	27.3	3,365	7.9
Chesapeake and Potomac Tel. Co.	5,112	27.6	1,366	7.4
Southern Bell Tel. & Tel. Co.	4,119	25.3	971	6.0
Michigan Bell Tel. Co.	3,039	43.9	622	9.0
Indiana Bell Tel. Co.	960	38.8	135	5.5
Wisconsin Tel. Co.	4,156	49.9	1,208	14.5
Illinois Bell Tel Co.	15,234	34.9	4,607	10.6
Northwestern Bell Tel. Co.	5,891	49.3	1,566	13.1
Southwestern Bell Tel. Co.	11,892	55.8	3,363	15.8
Mountain States Tel. & Tel. Co.	4,290	45.6	1,358	14.4
Pacific Tel. & Tel. Co.	17,541	48.6	7,491	20.8
Total	102,947	23.1	31,770	7.1

Thus in all parts of the country the Bell System facilities aided stockholders, and especially small stockholders, in handling their rights. In addition through the New York and Boston offices of the American Company, the Securities Company handled a total of 51,000 transactions in rights as against 45,000 of such transactions in 1928, the majority of these being handled by mail. These transactions averaged in size 8⅓ rights.

Organization and Personnel

As is the case of stock offers, this convertible bond issue was handled by the Treasury Department. Although its

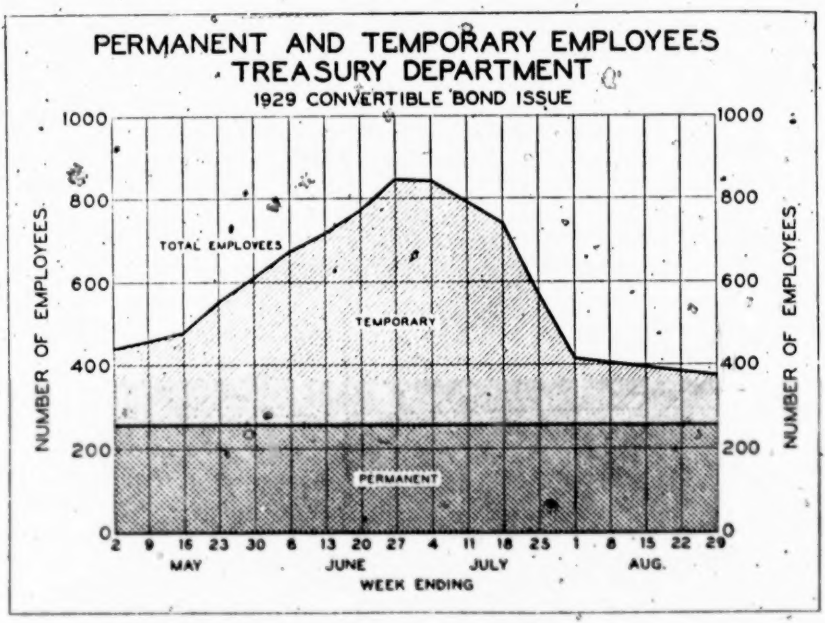
permanent personnel is experienced in conducting stock issues, there were many problems of a different nature to [fol. 3503] solve as for example, that of production in various phases of the work, the estimation of personnel requirements and the handling and delivery of bearer securities. Stock issue methods were used as much as possible, but there were some operations for which no recent precedent existed and which required the development of entirely new practices.

The bonds were issued in the form of temporary bearer certificates with the first two semi-annual interest coupons attached, these temporary bonds being exchangeable on and after October 1, 1930 for the definitive bonds with all subsequent coupons attached. This plan of issuance was decided upon as more practical and economical than that of issuing temporary interim receipts and then, prior to the date of the first interest payment, exchanging them for the engraved bonds with all coupons attached. As it seemed probable in the light of past experience that numbers of bondholders would convert their bonds before October 1, 1930, the number of pieces of the definitive bonds to be produced, authenticated and exchanged should be substantially reduced and the saving to the Company effected by this plan should be of substantial size.

To assist the permanent employees of the Treasury Department in handling the bond issue work, a force of about 600 temporary employees was utilized, this peak being reached, of course, near the close of the subscription period. The number of temporary employees in the 1928 stock issue, however, exceeded this total by about 125.

The quality of the temporary personnel was high. Although the bond issue began during a period when it was not possible to obtain as high a percentage of men from the colleges at the beginning of the issue as was done last year, nevertheless, as time passed and more students, recent graduates, and instructors became free for summer employment, numbers of them were added to the organization. A total of 189 men from 76 colleges and universities were [fol. 3504] engaged. These men were of the type which proved very adaptable to their new conditions. In addi-

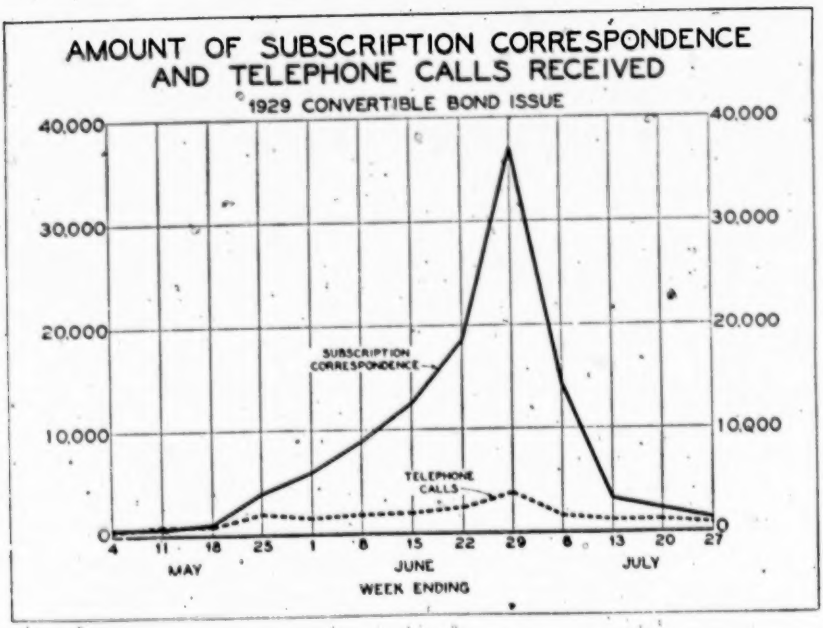
tion, more than a score of permanent employees from other parts of the Bell System filled positions of responsibility.



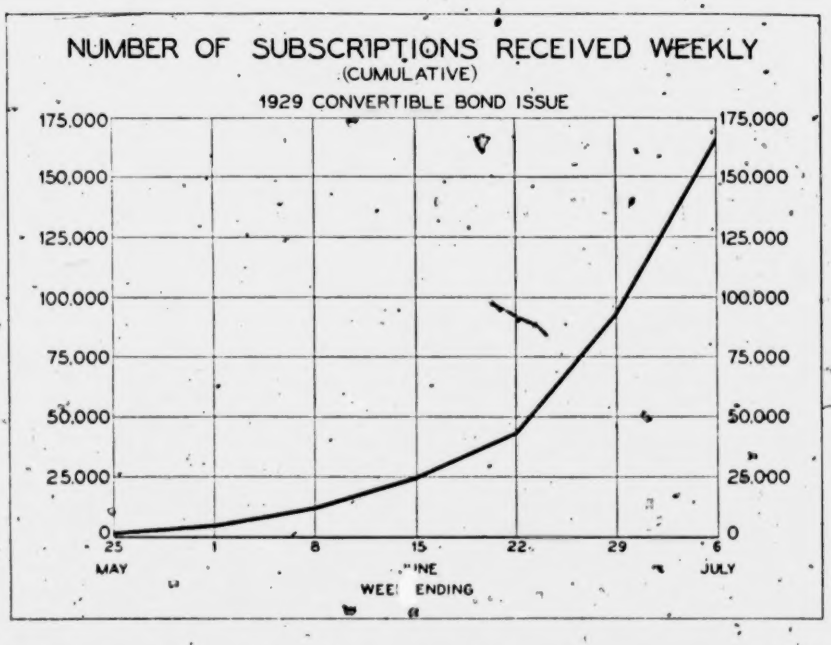
With such an increase in the work and in the personnel of the Treasury Department, available quarters at 195 Broadway were quite inadequate. Consequently, the entire sixth floor of the New York Federal Reserve Bank Building, containing 33,000 square feet of additional office space, was engaged, and 560 employees, the bulk of the bond issue organization, were moved there. While this division in the Treasury Department forces was not an ideal arrangement, automobile messenger service at frequent intervals proved satisfactory in linking the whole organization together. The accompanying illustrations show various sections of the bond issue organization in the process of handling their work.

The data on the volume of mail give one an idea of the size of the undertaking. About a million and a quarter pieces of bond issue mail were sent and received, and at [fol. 3505] the same time, of course, the regular Treasury Department correspondence was handled, and the regular July dividend checks to over 455,000 stockholders were prepared for release.

Although the bond issue correspondence was somewhat less in volume than was last year's stock issue correspondence, it was of a more difficult nature to answer, due to the lack of knowledlge of large numbers of stockholders concerning this type of financing. The chart below shows the amount of subscription correspondence and telephone calls received by weeks. Of a total of over 100,000 incoming letters, about 35,000, those representing incomplete and irregular subscriptions, were referred to the special organization handling the correspondence work. Of the latter total almost one-half required the preparation of special replies.



As indicated by the chart on the next page, the subscriptions did not flow in evenly over the entire period but rose to a sharp peak at the close. For example, the number of [fol. 3506] subscriptions received through the middle of June represented less than one-sixth of the ultimate total. The work involved in correspondence and in the rights purchase and sales transactions also, experienced marked peak loads, and on July 1 the operation of delivering the temporary bonds to the subscribers began.



This problem of delivering the bonds was one of the most important confronting the Treasury Department on which no help could be had from past stock issue experience. In order to fill the subscription allotments 307,600 $100 pieces, 39,700 $500 pieces, and 167,350 $1,000 pieces, or a total of 514,650 pieces were required. When it is considered that these bonds are in bearer form, an idea may be gained of the great responsibility placed upon each employee engaged in bond delivery work. It is a credit to all concerned that these bonds went through all the necessary steps of the routine from receipt at the vaults to de- [fol. 3507] livery to the post office without the loss so far as is now known of a single piece by the Treasury organization.

Needless to say, in order to achieve this result, extreme care and frequent verifications were necessary. The bonds were delivered to the main vault, located not far from the 195 Broadway offices, where complete count was made by designated officials. Great care was exercised in their subsequent transfer to the secondary vaults for counter delivery at 195 Broadway, and for the mailing unit located in the Federal Reserve Bank Building. Upon their receipt there and again prior to their dispatch to subscribers either by mail or by delivery at the counter, addi-

tional verifications were effected. In mailing, special precautions were taken in order that the bonds be allotted in the correct amount and in the correct denominations. To insure such accuracy each subscription was handled by two persons: the first man counting the bonds and recording the allotments to the individual subscribers, and the second man verifying the allotments and enclosing the bonds in envelopes. After final verification, the 130,000 specially manufactured envelopes needed for mailing the bonds had to be sealed by hand, an operation which required fifty gallons of mucilage.

The affixing of the postage to such a quantity of registered mail was accomplished in a unique and unusually efficient manner through the use of newly developed postage meter machines. These machines, which were the first of their kind to be put in practical operation, were specially adapted for the use of the American Company on this work, being so adjustable as to imprint on the envelopes varying amounts of registered postage according to the different weights of the individual pieces of mail involved. Besides being speedier than the old method of affixing stamps by hand, these machines eliminated the problem of maintaining a supply of registered mail stamps in varying amounts and accounting for their use, since the meters attached to [fol. 3508] the machines automatically recorded this. In all, over $24,000 meter postage was imprinted.

The convertible bond issue, the largest piece of Bell System financing, was in all respects a success. The financial press spoke well of the issue, a substantial interest was manifested by bankers and brokers, and a wide-spread distribution of the bonds was obtained which has broadened the investment interest in the business. The stockholders were aware or were made aware of the value of their rights to such an extent that only a negligible percentage was allowed to lapse, and many pleasant public relations contacts were established in all parts of the country through Bell System employees. Sincere appreciation is due these employees, both permanent and temporary, who contributed to the success of the issue by their loyal and effective work.

H. Blair-Smith.

[fol. 3509] DEPOSITION EXHIBIT # 10

Article Contained on pp. 253-265, Bell Telephone Quarterly, October 1928, Entitled "1928 Stock Offers of A. T. & T. Co." Written and Testified to by Witness Blair-Smith

In order to provided the Bell System with funds needed for new plant construction, the American Telephone and Telegraph Company offered its stockholders of June 1, 1928, additional stock at par, $100, in the proportion of one new share for each six shares then held. The terms of this offer were the same as for the preceding offer in 1926, except that the rate of interest allowed on subscription payments during the installment period was five percent instead of six. The subscription privilege expired on August 1, 1928.

Largest Bell System Financing

The par value of this offer was $185,863,000, exceeding by some $30,000,000 the amount of its predecessor. It constituted the largest piece of financing ever undertaken by the Bell System. Its size, however, was not large in relation to the total capital obligations of the Bell System already outstanding, nor did it represent a large average investment per stockholder.

Over 430,000 stockholders were entitled to subscribe under the offer, a number greater by 250,000 than the next largest stock list of an American corporation. If these stockholders and their families had been living together in one community, they would have formed a city larger than Detroit. One can picture the difficulties of making a stock offer in a city as large as Detroit involving one member of every family living there, not alone its bankers and its business men, but every element in its population as well, including many of its sick, aged and infirm. Even with this concentration of stockholders within the confines of one city, where they could be quickly reached by mail, by [fol. 3510] telephone, or by personal visit, it would have been practically impossible to make them all understand the offer and utilize their rights before its close.

265,000 Subscriptions Received

The 265,000 subscriptions to this issue were for more than 99½ percent of the stock. This result, which bettered

the record of the previous issue, did not come by accident; it was due to the local facilities provided to help stockholders as heretofore and to additional efforts made to reach those who were thought most likely to need assistance.

Assistance to Stockholders

It was explained to stockholders in the announcement circular of May 16 covering the offer that information and assistance could be obtained from local Bell Telephone business offices; and to make this service effective provision was again made by the Bell Telephone Securities Company so that most of these offices could accept small orders to buy and sell rights and also receive subscriptions for transmittal to the American Company. Along with the subscription warrants mailed later, there were sent a brief letter of explanation from the President of the Bell Telephone Securities Company, a series of questions and answers about the offer and an order blank for convenient use in requesting the purchase or sale of rights. Then with July dividend checks a final notice was enclosed reminding stockholders once more of the expiration date.

In 1926, when similar measures were taken, over 20,000 stockholders allowed their rights to lapse. For the most part they were owners of fractional warrants only, but as a result 1 percent of the issue remained unsubscribed. It appeared that such of these who were still stockholders would be the ones that could be singled out as most likely [fol. 3511] to suffer financial loss through nonuse of their rights. A list of them contained the names of some 15,000 people, distributed throughout the country, and under date of July 11 they were all mailed individually addressed letters urging them not to sacrifice their rights.

In a desire to offer personal assistance to their patrons wherever it seemed most needed, Associated Companies secured the names and addresses of these people living in their states and tried to reach them before the close of the subscription period. Employees doing this work reported that about half the interviews could be concluded satisfactorily by telephone. For others the telephone call was followed by a personal interview to insure complete understanding of the value of the rights or in some cases the motive in bringing the matter to their attention. Unfor-

tunately, some stockholders for various reasons could not be reached in time.

It was chiefly by means of this follow-up work, special letters from the American Company and personal calls from Associated Companies, that the percentage of unused rights was cut in two as compared with the 1926 record. Rights worth many thousands of dollars were thus exercised or sold for others to exercise which would have become valueless if allowed to lapse. In most cases the money saved for stockholders was money they could ill afford to lose. For instance, one stockholder was visited who was blind and partially deaf and whose wife was an invalid. They were in needy circumstances and were ignorant of the value of the warrants they had thrown away. The rights were found, however, in a pile of old papers and a check for the proceeds was later delivered. In another typical case, a poor woman holding 4 shares of stock said that she had received a letter from the American Company wanting to know if she cared to buy any more stock. Having no money to spare she said she did not answer the letter and had thrown all the papers out. They were finally [fol. 3512] located in a waste barrel and she received a check for $46.70 as the proceeds.

Most of those who were approached expressed surprise and gratitude at the interest which the Bell System was taking in their financial welfare; they had not believed a large corporation would go to the trouble of communicating with small stockholders to assist them in this manner. It was discovered that at least 4,000 stockholders would doubtless have let their rights lapse, even after receiving the special letters above referred to and other communications, if they had not been interviewed by employees.

Transactions Through Associated Companies

Counting all contacts which Associated Companies had with stockholders in the purchase and sale of rights and the receipt of subscriptions through their business offices, they handled some 125,000 transactions. While this represents but 21 per cent of the estimated total stock issue transactions through all channels, including banks and brokers,

Table I

1928 Stock Issue Transactions Handled Locally by Associated Companies for Their Patrons

Territorial Classification	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Percent of Stockholders	Number of Transactions	In Percent of Stockholders
New England Group	2,932	2.6	2,376	2.1
Eastern Group	22,999	14.5	15,079	9.5
Central Group	15,621	24.5	9,724	15.3
Southern Group	2,614	16.7	1,619	10.3
Northwestern Group	4,219	35.2	2,394	20.0
Southwestern Group	9,857	46.9	6,316	30.1
Mountain Group	3,331	34.9	2,408	25.2
Pacific Group	13,273	39.0	10,392	30.[illegible]
Total	74,846	17.3	50,308	11.6

[fol. 3513] it nevertheless exceeded by 49 percent the number which Associated Companies handled in 1926. Thus it is evident that the local facilities they offered to their patrons were more widely used as these facilities became better known. Also, as shown in Table I giving the territorial distribution of these transactions in comparison with the distribution of stockholders, it was found especially welcome in the states west of the Mississippi where a large proportion of the stockholders have bought stock through the Direct Sales Plan of the Bell Telephone Securities Company.

370,000 Fractional Warrants Issued

The importance of rendering every practicable service to stockholders in effecting rights transactions may be appreciated when one realizes that over one-half of the total warrants originally issued were for fractions of shares and had to be matched up in order to be utilized in subscriptions. In other words, 370,000 stockholders received fractional share warrants and had to acquire or sell rights if they were not to permit these warrants to lapse. If but 10 percent neglected to do this, more than 100,000 rights would have been left unexercised from this cause alone.

It is estimated that the Bell Telephone Securities Company, in taking care of 119,000 purchases and sales of rights for investors in 1928 through the New York and Boston offices of the American Company and through the

local offices of Associated Companies, handled 34.6 percent of the total non-speculative transactions in rights, as compared with 31.7 percent in 1926 and 19.4 percent in 1924. Of course, these orders were handled by it not for purposes of profit nor in competition with brokers, but merely as a convenience to stockholders and others desiring to subscribe for stock. In fact, the average Security Company transaction, which was for 4¾ rights only, was much below the size of order brokers can profitably handle and quite [fol. 3514] a number of banks took advantage of the Bell System facilities to complete small transactions in rights for their customers. Therefore, in addition to expediting the whole stock issue procedure and greatly assisting stockholders, the completion of small rights transactions through the Securities Company represented a service to the financial community generally.

Rights Prices

On May 17, 1928, rights reached a high of $16⅛, which exceeded all prices for American Telephone stock rights since the issue of 1901. Rights later dropped to $11⅜, coincident with a general decline in the price level of securities during the subscription period, and were selling for $11¾ at the close of the offer. The average market price was twice that of the previous issue.

Subscription Results

Preliminary estimates were exceeded when subscriptions reached a record total of 265,000. This was about 40,000 more subscriptions than were received in 1926 and the percentage of stockholders subscribing was also found to be larger. As shown in Table II giving comparative statistics for the 1928 and 1926 issues, by far the greater part, or about 78 percent, of the subscriptions were made by payment in full as compared with 76 percent in 1926 and 73 percent in 1924. However, in both 1928 and 1926 the same percentage (83.8 percent) of the shares was subscribed under the single payment plan. Just as heretofore, the larger subscribers selected the single payment plan, the average subscription being for 7½ shares as compared with 5 shares under the installment plan. The average of approximately 7 shares for total subscriptions was somewhat higher than in 1926 when it was 6¾ shares.

Over $166,000,000 of payments were received as of the [fol. 3515] subscription due date, August 1, 1928. The larger payments, however, those made by banks and brokers for their own account and for their clients, were not

Table II

Comparative Statistics of the 1928 and 1926 Stock Issues
(1928 Figures Partly Estimated)

	1928	1926	Increase of 1928 Over 1926
Par value of stock offered	$185,863,000	$154,127,500	20.6%
Par value of stock subscribed	185,158,600	152,554,400	21.4%
Percent of Total stock subscribed under single payment plan	83.8%	83.8%	0
Number of stockholders on the record date	432,004	371,347	16.3%
Number of subscriptions under single payment plan	206,000	173,265	18.9%
Percent of Total subscriptions	77.8%	76.4%	1.4%
Number of subscriptions under installment plan	59,000	53,535	9.5%
Percent of Total subscriptions	22.2%	23.6%	−1.4%
Total subscriptions	265,000	226,800	16.7%
Number of subscriptions by stockholders	252,000	213,800	17.9%
Number of subscriptions by others	13,000	13,000	0%
Average shares offered per stockholder	4.30	4.15	.15
Average shares per single payment subscription	7.53	7.38	.15
Average shares per installment subscription	5.09	4.61	.48
Average shares per Total subscription	6.99	6.73	.26

made until the very end of the period, so that $48,000,000 was taken in and deposited on the final day alone. As only a small proportion of the total funds received was needed for immediate expenditure the balance has been invested in the highest grade short term securities, such as United States Government bonds and certificates of indebtedness and tax anticipation notes of selected municipalities. These obligations were chosen with dates of maturity or of repurchase by strong institutions coinciding with dates when the [fol. 3516] funds will be required by the Bell System. It is not the policy of the Company to loan in the call money market.

The usual statistical analysis of subscriptions has been completed only for those paid in full. Chart No. 1 shows full paid subscriptions classified as to size of subscriptions with the unshaded portion at the top of the column representing the number of new stockholders gained in each group. It also compares the results with the 1926 issue. The larger proportion of total subscribers in the lowest group indicates the great interest of small holders in the offer. In addition around three-quarters of the 10,000 new stockholders added through full paid subscriptions fell in this group.

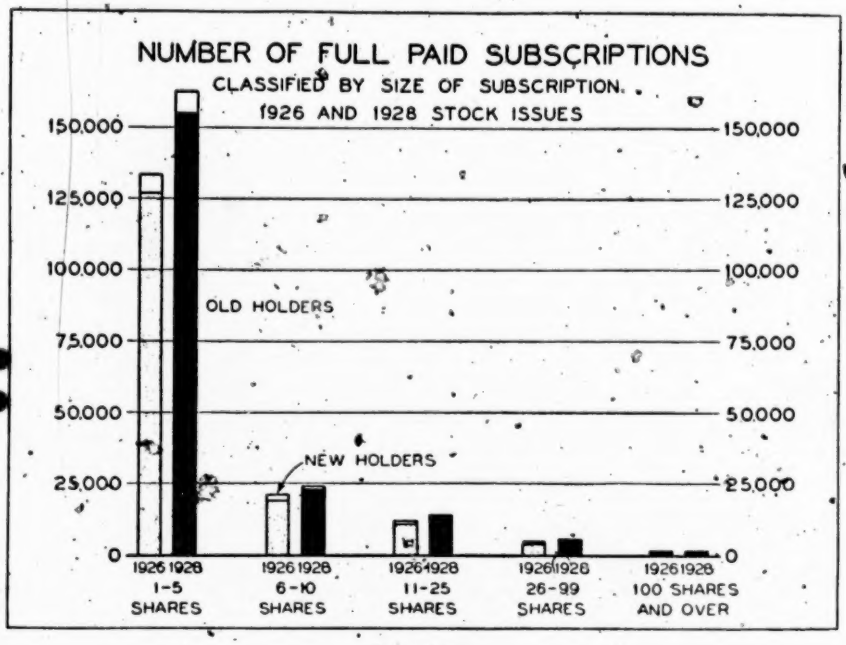


Chart No. 1.

The small amount of stock unsubscribed is now available for sale as may be determined by the Directors of the Company. Such shares in the past have, at some appropriate time, been sold at the current market price and the proceeds placed in the Company's treasury for the equal benefit of all stockholders.

Stock Issue Organization

To the Treasury Department of the American Company, an important aspect of the stock issue was the organization and production problem it represented. Some idea of

the volume of clerical work involved may be realized from the fact that more than 1,500,000 pieces of mail, incoming and outgoing, were handled within a few weeks by the Treasury Department in connection with the stock issue, not including the 430,000 dividend checks mailed in July or any of the regular corr[redacted] handled during the period.

Chart No. 2 showing the v[redacted]scriptions received weekly gives a suggestion [redacted]ak which the subscription work reached at the [redacted] period, when over 70,000 subscriptions were in proc[redacted]ng reviewed and

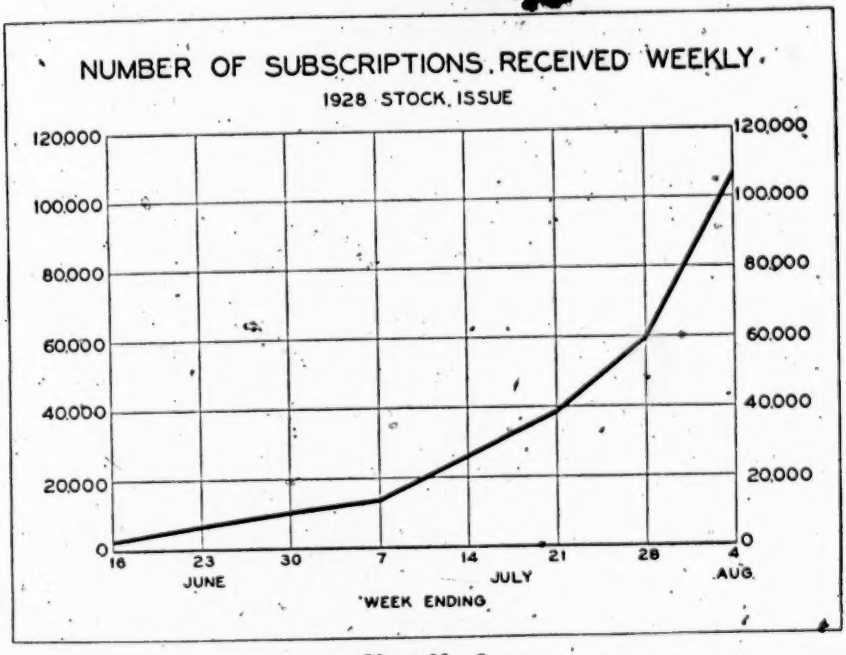


Chart No. 2.

recorded. Chart No. 3 showing the number of employees [fol. 3517] engaged in the Treasury Department indicates how the temporary forces were increased and decreased to meet the situation. During the subscription period the total personnel of the Department rose to approximately 1,000 employees, of whom more than 700 were temporarily engaged for the occasion.

As in the case of other recent stock issues, many people were available for summer employment from the colleges and universities and it was found possible to obtain an exceptionally high grade of temporary personnel. Among 294 men so employed there were representatives from 115

educational institutions throughout the entire country. Also, as in the past, a number of experienced supervisory employees was secured from other parts of the Bell System to fill responsible positions in the stock issue organization and their services were found indispensable.

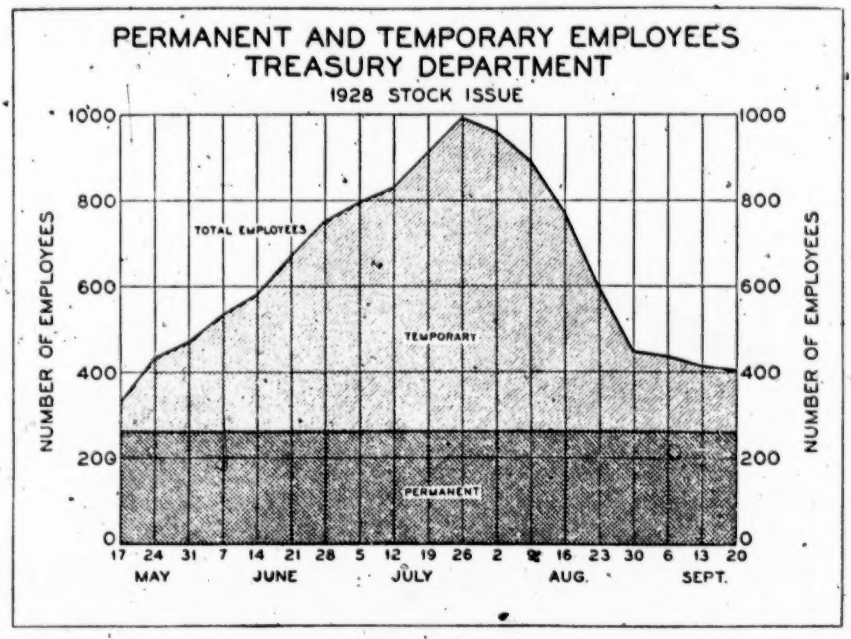


Chart No. 3.

The training of temporary employees for their stock [fol. 3518] issue jobs has always presented some difficulty, not only because the work lasts for such a short period, but also because nothing can be done before the announcement date. This time a new step was inaugurated in the form of a one-day school, which most of the new employees were required to attend. This school was conducted in the manner of informal conferences and the purpose was to give the new employees an over-all picture of the stock issue undertaking, which they could not ordinarily obtain once they had reported to their individual sections. Actual training in the details of stock issue work, of course, followed as heretofore after they had received their individual assignments. This experiment proved distinctly worth while in the opportunity it afforded of introducing these people to Bell System ideals and in the effect it had in strengthening morale for the strenuous work in hand.

The general plan of organization for the stock issue [fol. 3519] work was substantially the same as that estab-

lished for the 1926 issue. The principal change was made in connection with the handling of incomplete and irregular subscriptions requiring correspondence, which is recognized as one of the most difficult tasks associated with a stock issue. In 1928 approximately 29,000 letters were received requiring individual answers, not including several thousand more which were handled by the use of printed forms. The organization for this work was divided into six sections, each performing similar functions for an alphabetical subdivision of the stockholders' list, and each provided with its own dictators, stenographers, control records, and correspondence files. This form of organization facilitated the matching up of cases in process, permitted a closer supervision, and resulted in better service to stockholders.

The accompanying illustrations show the office arrange- [fol. 3520] ment for several of the important organizational divisions of the Treasury Department handling stock issue work. With the increasing size of the temporary organization from issue to issue requiring office quarters, the procurement of suitable space has been progressively difficult. Estimates of the temporary floor space needed for the 1928 issue called for 38,000 square feet. Since this amount of space was many times greater than any space to be spared in the 195-205 Broadway building, for the first time almost the entire stock issue force had to be housed at another location. Fortunately, four and one-half floors reserved for central office growth in the large 104 Broad Street building of the New York Telephone Company were found available and the stock issue organization began moving in during early June. These quarters proved to be admirably suited to the work and offset handicaps which had been anticipated in handling the issue with such a division in the Treasury forces.

Financial writers have referred to this offer of additional stock as the most successful in the Bell System's history. So it has seemed in every respect; in the large number of subscriptions received, in the small amount of stock left unsubscribed and in the many thousands of pleasant contacts with stockholders. The nation-wide ownership of American Telephone and Telegraph Company stock made the offer in some respects a great cooperative undertaking between Bell System employees and their investment part-

ners in the business. The results achieved seem to measure up to the best traditions of Bell System service and no doubt are a source of gratification to the thousands of employees throughout the country who were involved.

H. Blair-Smith

[fol. 3521] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 11

"Article Contained on pp. 253-269, Bell Tel. Quarterly, Issue of October 1926, Entitled '1926 Stock Issue of A. T. & T. Co.', Written and Testified to by Witness Blair-Smith"

The twenty-third offer of additional stock to stockholders for subscription by the American Telephone and Telegraph Company and its predecessor was made on May 19, 1926, the par value of the amount offered being $154,127,600. The terms of the new offer were substantially the same as for the previous issue in 1924, but this time the ratio was in the proportion of one new share for six old shares instead of one for five. As stated by the President in announcing it, the purpose of the new issue is to provide the Bell System with funds for new construction needed to care for additional business resulting from the constantly greater use of telephone service * * *

[fol. 3522] Table I

Comparative Statistics of the 1924 and 1926 Stock Issues
(1926 Figures Partly Estimated)

	1924	1926	Increase of 1926 over 1924
Par value of stock offered	$151,157,500	$154,127,600	2%
Par value of stock subscribed	149,174,800	152,520,000	2%
Par value subscribed under single payment plan	122,427,000	127,873,200	4%
Per cent of Total	82.1%	83.8%	1.7%
Market value of a share on the closing date for subscriptions	$125⅜	$143⅛	$17¾
Par value of stock offered	$151,157,500	$154,127,600	2%
Par value of stock subscribed	149,174,800	152,520,000	2%
Par value subscribed under single payment plan	122,427,000	127,873,200	4%
Per cent of Total	82.1%	83.8%	1.7%
Market value of a share on the closing date for subscriptions	$125⅜	$143⅛	$17¾
Number of stockholders on the record date	316,096	371,347	17%
Number of subscriptions under single payment plan	140,010	173,268	24%
Per cent of Total subscriptions	72.8%	76.4%	3.6%
Number of subscriptions under installment plan	52,221	53,432	2%
Per cent of total subscriptions	27.2%	23.6%	−3.6%
Total subscriptions	192,231	226,700	18%

Local Contacts With Subscribers

In 1924 for the first time provision was made by the Bell Telephone Securities Company for it to buy or sell subscription rights as desired by stockholders, over the counter and by mail in New York and Boston and through the Associated Companies at the local commercial offices in those states where the Direct Sales Plan was in effect. The Associated Companies report that the arrangement as it affected them proved valuable in the contacts it gave them with their patrons and the services furnished were so generally appreciated that similar arrangements were made in 1926 and in addition a plan was adopted under which local offices received subscriptions and transmitted them to the American Company. As evidence that the assistance thus extended was most welcome over 34,000 subscriptions were forwarded through Associated Companies operating under this plan and in addition 50,000 transactions in the purchase and sale of rights were taken care of locally.

[fol. 3523]

Table II

1926 Stock Issue Transactions Handled Locally by Associated Companies for Their Patrons

Territorial Classification	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Per Cent of Security Plan Stockholders	Number of Transactions	In Per Cent of Security Plan Stockholders
New England Group	2,024	194.4	1,458	140.1
Eastern Group	14,591	67.6	9,976	46.2
Central Group	10,600	49.6	6,814	31.9
Southern Group	1,851	34.4	1,167	21.7
Northwestern Group	3,102	50.0	2,069	33.4
Southwestern Group	6,800	62.3	4,703	43.1
Mountain Group	2,476	56.6	1,788	40.9
Pacific Group	8,453	81.7	6,140	59.3
Total	49,897	61.4	34,115	42.0

Note.—Security Plan Stockholders are those who have purchased shares through the Direct Sales Plan provided by the Bell Telephone Securities Company.

With the steady growth in the number of stockholders, the volume of additional work involved in an offer of stock has increased to a point where it is not possible to keep in the department during normal times a sufficient number of trained supervisory employees to fill all the added supervisory positions, and so it has been found not only necessary but possible to secure some such assistance from other

parts of the Bell System. During the recent issue, fourteen employees were so obtained and they furnished invaluable assistance.

A very large number of Bell System employees took an active part in handling various phases of the stock issue work and, as in the case of all important System undertak- [fol. 3524] ings, the employees, individually and collectively, contributed in great measure to its successful accomplishment. The manner in which the immense amount of detail associated with the stock issue was handled by everyone concerned was most gratifying, and it stands as another of the many instances where loyal support and untiring effort have achieved the desired results.

[fol. 3525] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #12

Article Contained on pp. 262-269, Bell Tel. Quarterly, Issue of October 1924, Entitled "The 1924 Stock Issue of A. T. & T. Co.", Written and Testified to by Witness Blair-Smith

The American Telephone and Telegraph Company on May 20, 1924, offered for subscription new stock to its stockholders of record on June 10, 1924, in the proportion of one share for each five shares then held. Thus determined, the stockholders had the right to subscribe for 1,511,575 shares of a par value of $151,157,500.

* * * * * * *

It would be inappropriate to close this article without a word of commendation of the spirit which manifested itself in the employees throughout the Bell System to make this issue a success in every way. This they did as is shown by the statistical figures given, and by many enthusiastic letters received with subscriptions from patrons and stockholders.

[fol. 3526] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #17

Article Written and Testified to by Witness Morsack, Appearing in Bell Telephone Quarterly of April, 1924, P. 100, "Accounting in the Long Lines Department"

Accounting for Special Contract Service

Although the Long Lines Department has no exchange service, and consequently none of the problems of exchange service accounting, we have a large development of what is known as special contract service, covering the use of our facilities for telephone or telegraph service between contract points for those users who, on account of the volume of their business, desire service between the same points either continuously or at stated periods. All of the accounting in connection with this service, including the rendering of bills against the subscribers, is handled by the Long Lines Accounting Department.

Special Contract Service is furnished at about 650 points in the United States, Canada and Cuba. The service furnished under these contracts plays a large part in the daily life of the nation, distributing price quotations to the stock and produce markets throughout the country, affording direct communication between the factories and selling offices of great industries, and carrying a large portion of the news which appears in the daily papers from Coast to Coast.

During 1923 we rendered 13,000 bills covering this service. Special care is necessary in preparing these bills because of the frequent changes in service, caused by the rearrangement of circuits requested by customers, as well as credits for unavoidable interruptions due to storms and additional charges for overtime and temporary service. [fol. 3527] Collections for this service are made by six Long Lines commercial offices, located at Boston, New York, Philadelphia, Atlanta, Cleveland and Chicago. A modified stub-accounting system has been adopted for the subscribers' accounts, the Accounting Department copy of the subscriber's bill showing the payments made and the unpaid balances, record of payment being obtained from the detailed collection reports sent in by the commercial offices.

[fol. 3528] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #18

Pp. 565-66 of Article Appearing in July, 1928, Bell System Technical Journal Entitled "Carrier Systems on Long Distance Telephone Lines", by H. A. Affel, C. S. Demarest, and C. W. Green.

Carrier Telephone Growth in Bell System

Whereas the use of the early types of systems was justified in competition with the alternative of additional wire stringing only for distances exceeding 250 to 300 miles, the new system proves economical for distances considerably less. This fact has naturally stimulated the application of carrier telephony in the Bell System. This is shown by Figure 1, which indicates the growth of these systems in terms of channel mileage afforded by their use. It will be noted that the rate of growth of the systems has increased greatly in the last two or three years, a result of the availability of the improved system.

At the end of 1927 there were in operation about 130,000 channel miles. By the end of 1928 the figure is expected to be about 230,000. This figure does not, of course, represent a very large proportion of the total toll mileage of the Bell System, which includes many circuits less than 100 miles in length. It is sufficient, however, to indicate that the carrier telephone systems are a substantial factor in the provision for the growth of the longer haul facilities, where they naturally provide the greatest economies. Their use is, of course, restricted to sections of the country in [fol. 3529] which open-wire construction is chiefly employed.* They have contributed toward lowering the cost of service and in making possible the toll rate reductions which have been put into effect within the past year or so.

*In localities having very heavy traffic requirements such as in the East, extensive use is made of toll cables.

[fol. 3530] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #19

Pp. 80-91 of Bell Telephone Quarterly of April, 1931, Entitled "Milestones, Guideposts, and Footprints", by R. T. Barrett

Many improvements in methods and in operation and supervision have raised the standard of efficiency to a higher level. This uniformity is reflected not only in the quality of local service, but also in that of toll service. On calls of the latter type, two or more sets of operators, often in widely separated territories, are involved in making the necessary connections, and if there were not a uniform standard of accuracy and efficiency, the best efforts of one group might be seriously offset by poor traffic results on the part of the other.

There has been a marked improvement in toll service during the five-year period under consideration. This improvement has included not only an increase in the percentage of toll calls completed, but an even more significant increase in speed of completion.

During 1925, the present practice of having the customer remain at his telephone while a toll connection is being completed was not generally in use and there is no record for that year of calls so handled. During 1930, toll calls completed while the calling party remained at his telephone constituted 82 per cent of the total calls.

Facilities for long distance and toll service have been greatly increased, an outstanding illustration being progress in extending the Bell System's toll cable network. Since the beginning of 1926 approximately 15,000 miles of toll cable, providing more than forty-two billion conductor feet of wire, have been constructed and put in service throughout the system. Seventy-five per cent of the cities [fol. 3531] of 50,000 or more inhabitants are now connected with the network of toll cables that are practically storm proof.

Long Distance Rate Reductions

There began in the latter part of 1926 a series of reductions in long distance rates which, taken in connection with the improvements in this type of service above outlined, as well as others, strikingly illustrate the progress made

toward more efficient and more extensive telephone service at a lower cost to the telephone user. The first of these reductions, made late in 1926, effected an estimated total annual saving to users of the service of about $3,000,000. In December, 1927, a further reduction was made, for a total annual saving estimated at $1,500,000. On February 1, 1929, another reduction became effective, for an annual estimated saving to the telephone users of $5,000,000. On January 1, 1930, long distance rates were further reduced, for an estimated saving of more than $5,000,000 a year. These four reductions represent, at the present time, a saving to the public of about $20,000,000 a year.

[fol. 3532] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #20

Pp. 92-102, Bell Telephone Quarterly of April 1931, by W. L. Dusenberry, Entitled "Teletypewriter Service and its Present-Day Uses."

While it is true that from time to time many concerns have been engaged in the manufacture of teletypewriter apparatus, it finally boiled down to the point where there were only five main manufacturing concerns and two of these were foreign corporations: Siemans Halske in Germany; Creed in England; Morkrum, Kleinschmidt, and the Western Electric in the United States. Then Morkrum-Kleinschmidt companies combined under that name; and later, for purposes of manufacturing economy, the Western Electric contracted with them to manufacture the teletypewriter apparatus for the Bell System and discontinued production itself. This left one organization in the American field. Soon afterwards, Morkrum-Kleinschmidt became the Teletype Corporation, which the Western Electric recently purchased.

* * * * * * *

Stock brokerage houses are the largest users of this type of service. Daily they set teletypewriters operating between all principal cities in the United States and radiating to many smaller municipalities, so that 160 cities are so connected.

* * * * * * *

The airways of the United States, which as recently as ten or twelve years ago were totally unprotected and generally even uncharted, are now provided with the most ef- [fol. 3533] ficient guides and safeguards science has been able to develop. From a single air route operating from Washington to New York at that time, we now find about 30,000 miles of regularly operated airway. Half of it is lighted for night flying; and all the principal routes are protected by the best land line communication system available, the teletypewriter. The Airways Division of the Department of Commerce of the United States Government has put its stamp of approval on this communication medium; and, as a result, large airway operating units like Transcontinental & Western Air, Inc., "The Ludington Line," Eastern Air Transport, Inc., and others, have seen fit to specify this service as a protection to their passenger traffic.

[fol. 3534] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #21

Pp. 114-131, Bell Telephone Quarterly Issue of April 1925, by J. O. Perrine, Entitled "The Development of the Transmission Circuit and Communication"

Although the use of loading dates only from 1900, there were in 1911, 85,000 miles of loaded open wire circuits and over 170,000 miles of loaded underground cable circuits. A great share of this latter mileage was in the inter-office trunk cables. To "load" these circuits, 125,000 loading coils were necessary.

By 1924, the use of loading coils had greatly increased when there were 200,000 miles of loaded open wire circuits, both toll and long distance, together with 135,000 miles of loaded underground toll circuits. However, the most extensive application of loading to cables is found in inter-office trunk cables where the mileage of loaded circuits is 500,000. On December 31, 1923, 777,000 loading coils were in use, with 990,000 on December 31, 1924, and the estimated number for December 31, 1925, is 1,240,000. Something over 60% of the loading coils in the Bell System are used in the plants of the Associated operating companies.

More Channels Without More Wires

The third phase of the transmission circuit problem, that of obtaining more communication channels without more wires, has always been a fascinating one. In fact, so fascinating that one may readily lose sight of the matter of costs. To the engineer, however, the economics of this [fol. 3535] problem, like all the previously mentioned problems, had to be considered as carefully as the technique, for it avails nothing if it is not possible to accomplish by the new method the same or better results than were obtainable with the old at no greater cost. Obviously, if more circuits are obtained without more wires, additional terminal apparatus must be provided. Immediately an economic balance must be sought between this additional cost and the saving accruing from less cost for wire distribution plant. This terminal apparatus has been developed which in many cases makes it economical to send more than one message either by telegraph or by telephone over a single open wire circuit. Cable circuits at the present time also carry several telegraph messages, but these are accompanied by only a single telephone message.

Compositing Telephone and Telegraph

First came the bridge polar duplex system which gave as many as four telegraph messages and one telephone message over a single pair of wires. In this system each of the two wires of the metallic telephone circuit is used with a ground return circuit and provides one or two telegraph messages. This compositing of telegraph and telephone messages is used on 635,000 miles of circuit, approximately one-third of which is in the plants of the associated operating companies, the balance being in the plant of the Long Lines Department of the American Telephone and Telegraph Company.

The "Phantom" Circuit

The second answer to the problem of more communication channels without more wires came in the so-called "phantom" circuit. The "phantoming" of existing circuits calls for one pair of wires to be used jointly as one wire together with another pair of wires used jointly as the other wire, to form a third circuit and so three telephone

conversations are carried by four wires. This method was originally suggested about 1884, but did not come into gen- [fol. 3536] eral use until 1904. During the first years of its development, the phantom system was applied only to open wire lines. When such a line entered a city where underground cable prevailed, the phantom or third circuit had to be carried on a separate pair of wires in the cable. In some cases where there were short lengths of cable involved, this practice was not always necessary. With the development of quadded cable which utilizes four wires in a cable as a discrete group, it was possible, about 1910, to apply the phantom method to cables. On January 1, 1924, there were 410,000 miles of open wire phantom circuits and 360,000 miles of quadded cable phantom circuits.

[fol. 3537] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #22

Pp. 141-149 Bell Telephone Technical Journal, Issue of January, 1930, by A. B. Clark, Entitled "Wire Line Systems for National Broadcasting"

The interconnecting of radio broadcasting stations by special telephone lines for the simultaneous broadcasting of radio programs began on a commercial basis in 1923. Today well over 30,000 miles of program transmission circuits are in use in the United States and transcontinental broadcosts by means of such wire lines are a daily occurrence.

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At the present time wire telephone systems are employed almost exclusively for this national distribution of broadcasts. It is the purpose of this paper to discuss the wire networks which are now being provided in the United States by the Bell Telephone System.

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From the technical standpoint, program transmission circuits are, of course, very different from message telephone circuits. In the first place, message telephone circuits must be arranged so that to and fro conversations can take place practically instantaneously. Program

transmission circuits on the contrary are single-direction transmission circuits. They are, therefore, not complicated by problems of electrical echo, singing and the like, which are ever present with long message telephone cir- [fol. 3538] cuits. However, although free from the problems of two-way working, the design and operation problems of two-way working, the design and operation problems of program transmission circuits are by no means easy as compared with those of message telephone circuits. On the contrary, in many respects, these problems are considerably more difficult, the reason being that the requirement as to approach to absolute fidelity of reproduction is much more severe than for message telephone circuits.

[fol. 3539] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #24

Pp. 181-194 of July, 1929, Bell Telephone Quarterly, by R. B. Parker, Entitled, "Telephone Tyepwriters and Auxiliary Arrangements"

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Telephone Tyepwriter Exchange Service

The Bell System provides equipment and circuits and gives a service which permits subscribers to handle their own messages, telephone or telegraph, in their own way. Telephone typewriter instruments have to a large degree the flexibility of telephone instruments and can be interconnected through suitable switchboards in the same manner. It is, therefore, quite feasible to provide a large number of subscribers in their business offices with these instruments and to furnish wire interconnections between these subscribers as they may indicate their desires. The service need not be confined to a single city but any subscriber in New York may be connected to any subscriber similarly equipped in some other city, the time required to complete this connection being of the same order as that required to complete a telephone connection between the same two points. A service of this character is analogous to present telephone service in that the subscriber would, in general, provide his own telephone typewriter operator

and on the completion of the desired connection to the called subscriber would handle his messages in any way that he saw fit.

An experimental service of this character has been established between switchboards and stations installed in telephone company offices in New York, Boston and Chicago and some adjacent cities. The circuit layout for this [fol. 3540] installation is shown in diagrammatic form in Fig. 16 and Fig. 17 shows the switchboard installed in New York. All information concerning calls is handled by telephone typewriter instruments and it has been found that a direct connection between a station in New York and a station in Chicago can be made in a very short time, while connections between Boston and Chicago or the reverse requiring one switch at New York also adds but little to the time required.

[fol. 3541] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 25

[fol. 3541] Bell Telephone Quarterly, October, 1924

Telephone Development of Important Cities—January 1, 1923

Country and City for Exchange Area	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones per 100 population
New York	5,884,000	1,072,632	18.2
Chicago	2,858,000	638,650	22.3

[fol. 3542] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 26.

Article Appearing in Bell Telephone Quarterly, Issue of January, 1925, Entitled "The Work of the Bell Telephone Securities Company", by D. F. Houston, Appearing on pp. 37-41

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It has been observed within the last year that editors of investment columns in magazines and newspapers have been giving an increasing amount of space to the merits of American Company stock and have been recommending it to their readers as a safe and conservative investment.

One editor has said very aptly that to buy stock in the American Telephone and Telegraph Company is to share in the general growth and expansion of the entire United States. Another editor on the Pacific Coast quoted a statement from F. W. Wolf of the Pacific Telephone and Telegraph Company, in which the latter said:

"Every subscriber a shareholder" is an extraordinary slogan—it is received at first as a blatant boast; then it becomes a high ideal; and finally it appears to be a splendid possibility. The Bell System, throughout the entire country, is carrying on a work of a very great significance in the redistribution of the shares of the parent American Telephone and Telegraph Company. And California, as expected, has been quick to realize her splendid opportunity. In less than six months more than two and a quarter million dollars has been converted into certificates of the 'universal investment stock' by 2,000 persons who never before had owned a share, and the demand is steadily increasing.

"And what 'high pressure' stock-selling methods were employed? Not a cent paid in commissions; not a reward offered of any kind; just an army of telephone employees, themselves stockholders so imbued with a sense of loyalty that they wanted to bring others into the Bell family."

The work of the Bell Telephone Securities Company in bringing about a wider distribution of the stock of the American Company conduces to the financial strength and economical financing not only of that Company, but also of the whole Bell System.

[fol. 3543] DEPOSITION EXHIBIT No. 27

Article in the Bell Telephone Quarterly, Issue of January, 1928, Entitled "An Economic Review and Outlook", by F. E. Richter, Appearing on Pages 27-41

An Economic Review and Outlook

The business developments of the year 1927 have afforded a sharp contrast with those of 1926. The earlier year, as was noted in the January, 1927, issue of this Quarterly, was "characterized by an exceptional degree of stability

of business operations, especially considering the high level of business activity" during that year. In the course of the year 1927, while the volume of trade and industry, with some notable exceptions, remained on a generally high level, a marked business recession occurred. Whereas, therefore, as was indicated a year ago, "1926 established more than its share of new high records," 1927 did not, and it was more interesting for having furnished a number of economic paradoxes.

Some Paradoxes

Thus, for example, two of the outstanding records of the year, namely, the high prices reached by industrial stock averages and the enormous volume of stock transactions on the New York Stock Exchange, were attained in the face of the business recession and of declining business profits. Easy money conditions were presumably the most potent single factor in bringing this about; and lower money rates occurred in spite of a net loss of gold by export and earmarkings, from the banking reserves of this country. Sterling exchange not only rose above par for the first time in more than a dozen years, but went to the gold export point, at the very time of the year, the autumn, when sterling naturally declines because of foreign purchases of our crops. Average wholesale commodity prices, which, according to orthodox pre-war conditions, should move in the same direction as, but slightly later than industrial activity, were weak throughout the first half of the year, when industrial activity was being maintained at levels little different from those of 1926, and then began to strengthen and turn definitely upward in the second half [fol. 3544] of the year, when business recession was more clearly in progress. Bituminous coal prices were weak during the greater part of a year which witnessed a major coal strike. Wage levels remained firm or rose slightly, in the face of almost steadily increasing unemployment from April on. The review of the events of 1927 which follows will indicate the reasons for some of these paradoxes.

If one must yield to the easy temptation to characterize by a single epithet, the year 1927, in its domestic industrial aspects, might best be described as one of declining profit margins and decreasing profits, brought about both by keenness of competition and by a gradual slackening in the

volume of output as the year wore on. The keen competition made itself evident from the opening of the year. Nevertheless, during the first quarter there was little effort made in any line to curtail output, and in some industries production was notably increased above the levels both of the preceding quarter and of the first quarter of 1926. The outstanding examples of this, to be sure, were in the bituminous coal and cotton textile industries, where special factors were operating. In the case of the former the imminence of a strike on April 1st naturally led to a high level of production in preparation therefor; in the case of the latter, the huge cotton crop of 1926 and the lowest cotton prices in more than five years gave a great impetus to cotton manufacturing.

The year 1926 having closed with inventories generally not at all burdensome, the high level of production in the first quarter of 1927 would perhaps have been of less serious import if it had represented something nearer a capacity rate than it did. But because consumers and buyers generally were fully aware of the amount of slack capacity and of the eagerness of manufacturers to maintain and increase the rate of output and to compete strongly for customers, price weaknesses followed and forced curtailment. For the fifth consecutive year then, came the phenomenon of a [fol. 3545] rather sharp decline in business from the first to the second quarter of the year. The recession, however, did not cease with the second quarter as had been the case in 1924, 1925 and 1926, but for the first time since 1923 continued on for the rest of the year. Toward the end of 1927, especially, general retail trade, as well as automobile sales, seemed clearly to give evidence of the effects of increasing industrial unemployment and decreasing wage earners' purchasing power. Meanwhile the number of business failures had with remarkable consistency kept well above those of 1926.

There were during the year two outstanding favorable factors, later supplemented by a third. These two were the maintenance of a volume of construction activity fully equal to that of 1926 (though the distribution between various classes of building was different), and an almost uninterrupted decline in money rates. The third factor was such an upward movement in prices for agricultural products and live stock in the second half of the year and such

favorable crop weather in the autumn as assured an income for our agricultural population fully equal to and probably somewhat greater than that which was received in the 1926-1927 crop year. The balance to be struck from these conflicting forces, in endeavoring to assay the probabilities for 1928, will perhaps be more certain after a more detailed review of some of the developments of the year 1927.

Banking and Finance

It would be easy to compile quite a list of contrasts between the years 1926 and 1927. This list would include not merely industrial, financial, and other economic developments, but changes in the current of economic thought and in the expressions of these changes in business and financial policies. In few fields has the contrast between the two years been greater than in banking and finance. The year 1926 witnessed interest rates pretty consistently above those of the preceding year, month by month, in spite of [fol. 3546] gold imports and a gain in federal reserve system gold holdings. These higher interest rates, to be sure, were due in no small part to the cumulative effects of the high level of business activity during the second half of 1925 and the whole of 1926. Federal reserve system rediscount rates were maintained at 4% throughout the system over the whole year 1926, except at the New York Bank, and even there the 4% rate obtained during most of the year. As was noted in the article a year ago, "federal reserve open market policy, like the discount rate policy, was one of relative inertness all year." A different picture was presented in 1927. Gold imports in the first half of the year and declining business activity (resulting in smaller demands for credit and for currency) soon brought about easing money rates; and then from mid-summer on the federal reserve system adopted a positive policy directed to maintaining money easy. Increased security purchases by the federal reserve banks were soon followed by a decline in the discount rate of each of the twelve banks, from 4% to 3½%. Easy money prevailed despite substantial gold exports and earmarkings of gold for foreign account, which resulted by the end of the year in a net loss for the year of gold to the banking system of the country. This net loss was fully neutralized by federal reserve system purchases of United States Government securities. By De-

cember the total amount of credit being extended by the federal reserve system was in excess of that extended a year previous, in spite of the fact that the volume of business activity, relative to "normal," and the needs of business (other than seasonal) for credit and currency were continuing to decline. This change in policy of the federal reserve system was prompted by international considerations, of which more will be said later. It came about in spite of a bull market in stocks which in some ways eclipsed even the extraordinary markets of the preceding two and a half years and it seemed to indicate that federal reserve authorities were rather less concerned than at times they had been [fol. 3547] over what some persons had thought of as "speculative excesses."

In the allied field of finance, the year set up a number of landmarks. Not only did average prices of both industrial and railroad stocks reach new high record levels; bond prices also rose to the highest levels (and bond yields fell to the lowest levels) in more than a decade. In December the 1st Liberty 3½s advanced to a price which made their yield to their first call date, 1932, less than 3%, the first time that any of the war bonds had sold on such a basis except when very close to maturity. As a result of the favorable bond market, the year witnessed an unusually large, probably a record, volume of refunding financing, in order that borrowers might reduce fixed charges by the substitution of low-coupon bonds for higher-coupon bonds, short-term debt, and preferred stocks. The outstanding example of this was afforded by the calling of the 2nd Liberty bonds on the very first date on which such a call was possible; but meanwhile domestic corporations and foreign borrowers had issued hundreds of millions of dollars of new bonds to the same end. Partly because of this large volume of refunding financing, the total volume of new security issues in the United States, domestic and foreign (not including those of the federal government), rose to the enormous total of more than $9,000,000,000, exceeding by the best part of two billion dollars the previous high record total of 1926. To the huge 1927 total, security issues for foreign account contributed about $1,600,000,000. This also constituted a new high record. Notable increases over 1926 occurred in loans to Canada, the Far East, and Europe.

Some of the details of the remarkable record in new security offerings during 1927 may be of interest. Domestic railroads did the largest volume of financing by stock issues since before the war; even so, such financing represented only about 20% of all domestic railroad security issues dur- [fol. 3548] ing the year. The volume of real estate financing, as a result largely of the decline in certain types of residential building, was a marked exception to the general trend and declined by about 9% from the 1926 total. The volume of long-term financing by domestic states and municipalities was not only in excess of the aggregate for 1926, but probably slightly exceeded the record figure attained in 1924. Industrial and public utility financing broke all previous records, the former amounting to more than $3,000,000,000, and the latter to just about $3,000,000,000. A large volume of merger financing was included in both of these huge totals. Indeed, the current of mergers and consolidations, fed by the desire to overcome the tendency of profits to decline, ran strong during 1927. The rising prices in the security markets greatly facilitated the movement.

International Economic Factors

This seems an appropriate place to indicate the principal developments in international finance which had an important bearing on the situation in this country. In England the year was devoted to efforts, not altogether successful, to recover the ground lost during the damaging coal strike of 1926. To this end it was highly necessary that industry should enjoy the stimulus of as easy money as possible and as light taxes as possible. The latter also required that money be easy in order that Government borrowing operations should be carried on as cheaply as possible. At the same time, money must not be so easy as to cause gold to be drawn out of the country, for the Bank of England's reserve was none too large, and prospective currency reform measures, both in England and in India, made it highly desirable that this reserve be not merely kept intact but increased. Unusually large visible import balances carried over into 1927 and helped to keep sterling at a discount. The Bank of England, however, was losing a relatively little gold until demand for a large amount came from [fol. 3549] an unexpected quarter. Since the summer of

1926 the Poincaré government in France had been strengthening the position of the franc, and in the spring of 1927 decided to call upon the Bank of England for a substantial quantity of gold, and did so. To make a long story short, this and other factors led to a conference of the heads of the central banks of England, France and Germany, respectively, and of the Federal Reserve Bank of New York. Following that conference, the major drain on the Bank of England ceased and measures were taken to bring an easing of money in this country as a result of which, as indicated earlier in the article, pressure has been taken off sterling to such an extent that early in December sterling went to the gold export point and some gold left New York for London.

Meanwhile, France, in the process of the rehabilitation of the franc, and other countries (partly from the proceeds of loans) had accumulated substantial balances over here which were either held as bank balances or were converted into investments or exchanged for ear-marked gold. (Some of the countries which stabilized their currencies in 1927 drew gold from New York to build up domestic reserves.) The developments of the year in this regard, therefore, carried much further the process which had been going on for some years of strengthening the position of New York as one of the two great financial centers of the world, and making the status of the dollar as an instrument of international exchange more nearly comparable with that held by the pound sterling. Most of the countries of the world that have stabilized their currencies since the war have not gone onto a pure gold standard, but onto a gold exchange standard; and in such cases dollar exchange is at least one of the foreign exchanges on which these standards are based. In short, our large holdings of gold are increasingly serving not only as our own banking reserves, but as partial reserves for some of the most important of the foreign banking systems. In this there is inherent no element of danger but simply an element of increased responsibility for main-
[fol. 3550] taining elasticity and flexibility in the operation of our banking system.

The immediate short-run interest in German developments during 1927 centers in the fact that, partly as a result of substantial borrowings in this country, Germany, incidental to a definite increase in business activity, greatly

increased the volume of her imports and built up a rather large "adverse" import balance in her foreign trade. Especially notable increases took place in her purchases of American copper and cotton. As the year wore on, increasing attention was paid to the large volume of German borrowings, to the rapidly growing import balance, and, particularly after the submittal of a memorandum on the subject by the Agent General for Reparations, to the mounting expenditures of German political units. These factors derived the greater significance from the fact that beginning next autumn Germany enters the first year in which the maximum payments under the Dawes plan schedule come into effect; and speculation has therefore been rife as to whether, in view of this year's developments, next year must perforce witness the putting into effect of such financial controls as will make for distinct restraints on industrial activity. Indeed, a recession in German business occurred in the latter part of 1927.

For Europe as a whole, as for the United States, the year 1927 has presented a picture in which one of the outstanding features has been the presence and effects of increasingly keen competition, with wholesale commodity prices declining, as in the United States. This has been due in part to the natural evolution connected with recovery from war conditions, in part to the specific effects of the escape of Great Britain from the strike of 1926, in part to the general stabilization of more and more European currencies, and in part to the progress made in installing "rationalization" measures looking to and bringing about greater efficiency in industrial processes. The growing competition has been strikingly reflected in notable efforts [fol. 3551] at cartelization of various key industries of international character. Even this move has by no means solved all the difficulties. It seems certain that during the year 1928 these tendencies will continue in equal, if not in increasing, force. It is difficult to be very enthusiastic as to the probable net progress to be made by European business in the new year.

Meanwhile, it is interesting to note—without attaching undue significance to the fact—that the value of our exports to the whole world, of manufactures ready for consumption, failed during 1927 to continue at previous rates the year-by-year growth which had been characteristic of this class

of exports from the second half of 1922 on. The total value of our exports to Europe was during the first ten months of 1927 about 3% greater than in the corresponding months of 1926, representing a slightly lower proportion of our total exports to all continents than in the earlier year.

Domestic Industry; Labor; Agriculture

To return to the further consideration of certain domestic economic factors. It has already been noted that there has been under way in 1927 the most prolonged recession in business that has occurred since 1923. The recession, however, has been of moderate dimensions. By some it has been attributed largely to the stoppage of production by the Ford Motor Company, which in the spring ceased to manufacture Model T and began the long period of factory changes in preparation for the new Model A. There have certainly been other factors than this which played roles of some importance in bringing about the decline. There was in the first place the bituminous coal strike, which threw scores of thousands of workers out of employment for a number of months. Chiefly as a result of the coal strike, railroad traffic began in the second quarter of the year to show declines from the level of the year previous. [fol. 3552] This and the steady progress being made in increasing operating efficiency led the railroads to go even further in curtailing their purchases of equipment than they had gone in 1926. The disastrous spring floods in the Mississippi Valley adversely affected business in that region and elsewhere. The total volume of new construction in the United States in 1927 held up to the level of 1926 as far as dollar value went, but again, as in 1926, there was an increased proportion of construction by public bodies and by public utilities and a decreasing proportion of residential building, with the net effect of using less labor per dollar unit of construction. The oil industry definitely reduced its drilling operations as production continued to mount, and again a certain amount of labor was thrown out of employment. The heavy industries generally, with the outstanding exception of agricultural machinery, restricted operations and therefore curtailed employment. Steady progress in the more effective use of labor, both in industry and in agriculture, helped to add to the labor surplus.

The cumulative effect of these factors was the greatest amount of unemployment for some years, which in turn, as has been said, seemed by the end of the year to be having a definite effect on the volume of retail trade. Wage levels, however, remained firm throughout the year, and indeed the wage rate advances, including those on the railroad systems of the country, doubtless exceeded the wage rate decreases, both in number and in amount. It was clear that, for whatever reasons in any particular case, employers were seeking to use other means than wage reductions to cut expenses, in the face of declining profits. The most important wage reductions were in certain coal fields and, in the closing months of the year, in the New England cotton textile industry. It is almost needless to add that the year was characterized by an unusually small number of strikes and other major labor disputes.

The picture presented by agricultural conditions in 1927 has, as is frequently the case, been a mixed one, not only as between the volumes of various crops but as between price [fol. 3553] movements and the profitableness of operations in various regions of the country. The net result, as has previously been indicated, is apparently that our agricultural population will receive from the marketings of the current crop and live stock year an income fully equal to or greater than that received a year previous. A cotton crop nearly a third smaller than that of 1926 is bringing prices which should make cotton farmers' gross income slightly larger in 1927 than in 1926. The income of spring wheat growers and of cattle raisers will this year be distinctly above that of a year ago. Hog raisers, on the other hand, have suffered from a combination of relatively high corn prices and decidedly low hog prices. The tobacco crop is distinctly below that of a year ago in volume, as is the winter wheat crop, and some of the important fruit crops are drastically below those of 1926. On the whole, the territory between the Mississippi River and the Rocky Mountains has fared much the best of any region of the country in the gross and net money income from crops and live stock. Almost every important product of this region has been favored either by a large volume of production or by high prices, or even in some vases by both.

Commodity Prices

On the subject of wholesale commodity prices, the year brought forth its full share of discussion. The business recession naturally somewhat intensified the weakness in non-agricultural prices which had developed in 1926. The level of non-agricultural prices as a whole apparently declined to the lowest level since the war. Such important raw materials as coal and oil, iron and steel, silk and rubber, copper, lead and zinc, all suffered from the failure of production to be adjusted promptly to consumption. The price decline during the first six months of the year only increased the desire of consumers to buy ahead as little as possible. In certain industries there was a competition among sellers for even the small orders of buyers such as [fol. 3554] might be held far more characteristic of a sharp recession or of a real depression than of the mild recession from a level of activity well above normal that was occurring. The keenness of competition was by no means restricted to raw materials, but particularly as the year wore on and unemployment grew, spread increasingly (and characteristically) through the distributive trades.

The discussions of prices centered chiefly around the two customary focal points. On the one hand, much was said and written on the old and related subjects of volume versus price, the high cost of small orders, and the importance of proper cost accounting. Various raw material and semi-raw material "institutes" (trade associations) launched programs for the compilation by, and distribution among their members of accurate cost statistics. On the other hand, the broader question of the general commodity price level, its long-time trend and its relation to banking policies, came in for a lot of attention, the more so because of the sharp contrast between declining commodity prices and rising stock prices, and because of the large gold exports in the latter part of the year.

The question whether federal reserve policy was inflationary or deflationary in character still remained unsettled as the year ended!

The Outlook

The picture presented in the foregoing pages has naturally been a general one with most of the details lacking.

It is seldom true that movements in either direction proceed uniformly in all industries. Uniformity was certainly lacking in 1927. Cotton goods manufacture reached new high levels in 1927; construction activity was maintained at about the level of 1926; marked improvement occurred in the hide and leather industry; some improvement took place in woolen and worsted goods; the silk and rayon industries made their customary new high production records in spite of weakness in raw silk prices; the agricultural machinery industry was active and prosperous; there were [fol. 3555] record outputs of automobile tires, of cement, of petroleum, gasoline, and probably of lead; and there were record sales of ordinary commercial life insurance, in spite of the fact that World War veterans took out, by conversion or reinstatement, more than a billion dollars' worth of United States Government Life Insurance. Recessions in output were moderate in the case of copper, zinc, lumber, iron and steel, and anthracite coal, and more serious in the case of bituminous coal, automobiles, paper, glass, certain house furnishings, and railroad equipment. Whatever the directions or extent of the movement of activity during 1927, the year nevertheless ends for most industries with inventories still moderate and under control.

If at the end of 1926 there was any danger—and there was little—from certain real estate situations and from the installment situation, the developments of 1927 have lessened the chances of difficulties arising in these two fields. Progress has been made during 1927 in international financial stabilization, as well as in the working out of international understandings on certain elements of financial policy. Domestic credit has been easy throughout the year and gives promise of being easy in 1928. Generally speaking, the position of our agricultural population has been improved during the year just closing. It is fair to say that a little progress at any rate has been made by the oil industry in dealing with some of its problems of internal organization. The curtailment that has taken place in certain industries has probably paved the way for a more than seasonal increase in activity at least during the first half of 1928. There are no shortages of raw or semi-finished materials, of labor, transportation or communication facilities, or credit, to stand in the way of any upward movement of business activity that may reasonably be expected to

take place. At least a moderate upturn early in 1928 seems probable.

The main question for 1928 seems to be that of determining how long such an upward movement can be sustained [fol. 3556] and how soon it is likely to be followed by a downturn. There is nothing to indicate that 1928 will be a boom year. Neither the domestic nor the international situation warrants any such expectation. The curtailment in activity during 1927 has not in general been drastic, and therefore no shortages or deferred demands have arisen, except perhaps for one single commodity—Ford automobiles—which cannot be fully met in short order. Shortages, actual or prospective, are the raw principal materials of so-called business booms. Lacking these, it seems probable that 1928 will no more than duplicate on the average the record of activity of 1927. If this much is achieved, it will still be an "active" year. Perhaps it will not be sufficiently so to solve two of the major problems of 1927, that of unemployment and that of narrowing profits. In any case, political events, either at home or abroad, are likely to be minor rather than decisive factors affecting the year's economic developments in the United States.

Only casual reference has so far been made to one of the spectacular developments of 1927, namely, the large gold exports in the second half of the year. That no more was said was due to the fact that the gold movement has had little or no bearing or effect on the domestic business situation. For this, federal reserve policy, both in action and in the attitude taken in federal reserve system publications, has been largely responsible. Many persons look for further substantial gold exports in 1928. Whether or not they take place, the prospect of them need not be a cause for anxiety as to our credit structure or our domestic price level. In an article written for the July, 1924, issue of this Quarterly, the writer remarked that "so far as the present outlook indicates * * * the United States could, at any time within the next decade at least, export $500,000,000 of gold without having to make any but the slightest impression on the credit structure of the country." In spite of the growth in the volume of trade and industry since that was written, and in spite of the tremendous up-surge in [fol. 3557] security prices and real estate prices over the last three years, the writer still subscribes to the statement,

for the same reason that led to its expression in 1924. That reason is that intelligent federal reserve policy can prevent such a gold movement from constituting a shock to American finance and industry.

F. E. Richter.

[fol. 3558] DEPOSITION EXHIBIT No. 28

Pp. 32-42, Bell Telephone Quarterly, Issue of January, 1923, Entitled "The Budget Plan of the Bell System", by C. A. Heiss

The Budget Plan of the Bell System

The pages of history tell us of many ways by which mankind has sought to foresee and appraise the future. Soothsayers and astrologers, sibyls and oracles, all were held in high esteem in the life of their times. The bases for prophecies were many and varied; the position of the stars, the bones of lambs, nature's marking on stones, and many other things quite as irrelevant were all used. Great significance was attached to the interpretation of dreams, and we have a familiar example in the story of Joseph, who, from Pharaoh's dream of seven lean kine devouring seven fat kine, was able to anticipate the seven years of famine and, from the abundance of seven fat years, laid by stores for the lean years which followed.

With the advance of knowledge and lessons from experience, men have discarded these methods of appraising the future. They have learned that guesses, auguries, or "hunches" are unreliable guides and that the best assurance toward a prosperous future lies in careful planning for it—by studying what has happened in the past and, in the light of experience, surveying the problems and possibilities of the future so far as they may reasonably be foreseen. The wisdom of this course is universally recognized; by following it Governments hope to realize a partial solution of their present-day fiscal problems; modern business enterprises find in it a more scientific and safe way of directing their affairs, and even the twentieth century housewife finds it an excellent way to insure an abundance of [fol. 3559] "pin money" and to promote domestic happiness. Manifestly, other things being equal, the greater suc-

cess and satisfaction will be realized by those who intelligently follow this program of planning carefully their future course.

Modern business in particular, when conducted on a large scale, has, by experience, come to realize the value of recording, classifying and analyzing its problems, performance and potentialities in order to learn, if possible, what it may expect for the years which are to come. To this end carefully adapted methods of accounting and statistics have been developed to record the past and point to the future. By analysis of these the executive finds an indispensable aid in forming his judgments and directing intelligently his undertakings.

The Bell System with its immense problem—continually increasing in complexity—of performing a national telephone service for more than one hundred and ten million people, has not failed to appreciate the importance of utilizing this valuable and logical aid in conducting its affairs. For many years it has prepared a Budget Plan, or what is more familiarly known as the "Provisional Estimate." From simple beginnings, this Budget Plan has been developed along with the growth of the business, until it has become one of the indispensable adjuncts to successful administration and operation of the national system. In fact, without it, the administration of an organization so large and complex as the Bell System would be exceedingly difficult, if not impossible.

The Need for a Budget Plan

The Budget Plan or "Provisional Estimate" in the Bell System is a complete statistical summary of construction, operating and financial facts, both as they are presented by a pertinent period of past performance and as they may be forecast for a reasonable future period. It begins with, [fol. 3560] an analysis of past experience and, in the light of that, searches the future and makes orderly preparation to move upon it. Those who administer the business have available a comprehensive picture of the growing and changing character of the business for the purpose of reaching well balanced judgments as to the lines of development necessary to meet the public needs and as to the best administrative policies and practices to be followed.

In the past, this Budget has been confined principally to a survey of the situation for one year in advance, set up in comparison with the realized performance of the present and past. However, the continually increasing demand for telephone service; the greater dependence upon the telephone as a means of simplifying and expediting the conduct of business and social life; the more highly technical character of the facilities required; and the increasing complexity of the entire undertaking, all require from those who furnish this service an ever increasing foresight. The most careful planning for future years is now essential. It demands, moreover, (to meet successfully this evolution in business and social life) the wise provision of great quantities of additional and improved facilities, many of which require several years for engineering, manufacture and installation; the preparation of the most economical programs for obtaining and expending the large amounts of money required; and the solution of numerous and complex construction, operating and management problems.

A few facts may be cited to illustrate this expansion in the Bell Telephone System and the size of its problems. At the end of 1900, there were 37,000 employees, 800,000 company owned stations, a plant investment of $180,000,000, and net plant additions for that year of $35,000,000. At the close of 1921, there were 224,000 employees, nearly 9,000,000 company owned stations, a plant investment of $1,550,000,000 and net plant additions for the year of $180,000,000. [fol. 3561] (It is interesting to note that the net additions to plant in the Bell System for 1921 alone were as large as the entire telephone plant investment in 1900, accumulated during the 25 years after the telephone was invented.)

The future does not promise any slackening in the demand for additional service. New facilities must be added, equipment must be replaced, in brief the telephone structure must keep pace with our national development. Obviously, the many complicated problems presented by this widespread telephone structure, with its rapid growth, require most careful study of what has happened and most comprehensive analysis of the needs and possibilities of the future. To meet this situation, and to obtain a better appreciation of the effects of general industrial and economic conditions

upon the demand for telephone service and the requirements involved in these demands, it is necessary to look further into the future than we have in the past so that the task of rendering telephone service may be better visualized, and its problems anticipated and provided for intelligently in advance. To this end, the Bell System, during the past year, has substituted for its one-year plan a five-year Budget, by means of which it aims to obtain as comprehensive a picture as possible of the task ahead of it for at least that period. This five-year program, stepped up annually by adding one year and by correcting for previously unforeseen situations, provides a continuous and dynamic forecast of the problem before the Bell System.

The Character of the Budget Plan

This fundamental and continuous five-year Budget Plan aims to provide data which is truly comprehensive and well balanced from all points of view. The facts brought together are intended to show why and how certain things should be done, and what may be expected, particularly in [fol. 3562] development, capital costs, revenues, expenses and net return, as the result of the action proposed. Accordingly, past performance is tabulated and the reasonable assumptions for the future are set up in comparison. In the preparation of this picture, practically every department of the company is in some way or another concerned.

As a preliminary step the Executives must make available a tentative program of general policies in respect of the business and its future development, so that the several departments may have a basis upon which to proceed in bringing together the material for that part of the picture for which they are immediately responsible.

The Statistician must give his picture of economic and financial conditions, as these may be anticipated, with their probable effect on development; he must analyze business and labor conditions and the probable trend of interest rates and the money market. The telephone business, it is true, continues to increase with remarkable evenness year by year, in spite of wars, business depressions, and other disturbing factors, and, in general, is by no means as much affected by external influences as manufacturing, mercantile, and other business; nevertheless, economic influences

cannot be disregarded and no estimate of the future of the telephone problem will be fully significant which does not incorporate the result of careful study of economic factors such as the increase in national wealth, the tides of immigration, the increase or decrease in population, distribution of income, and housing conditions.

The Commercial forces must estimate as carefully as possible the increase in population in the territory to be served, the growth of cities and other communities, the extent to which these changes will influence the increase in stations, and the prospective use of telephone facilities by [fol. 3563] patrons. Possible new forms of service must be studied and their effect on the business ascertained; estimates must be made of the probable revenues which may be expected from each class of service which is or may be offered.

The Traffic forces must survey the requirements for handling the service demanded, in the way of both equipment and personnel. Related labor supply and costs must be studied. Various methods of handling traffic must be considered to find the most efficient and economical practices and types of equipment. All of these must be resolved into expected capital expenditures and operating costs for the period.

The Engineering and Plant forces must consider the traffic and service requirements as forecast for the future, and determine the amount of additional facilities required, the types of plant best adapted to meet efficiently and economically the demands for service as they are foreseen. They must also give consideration to spare facilities, and their fundamental plans must be such as to lay the foundation for meeting still greater service demands in the future in an orderly step by step progression along sound and carefully worked out economic lines. Replacement and rebuilding of plant and equipment must be considered and proper provision made for the maintenance of the property. All of these and many other factors must be resolved into plant, labor and material requirements, capital expenditures and operating expenses.

The Accounting forces must provide from their records data as to past performance of every phase of the business. They must also estimate and summarize future requirements as to taxes, fixed charges, dividends, and general and

miscellaneous expenditures. Items of revenue must be estimated and tabulated.

In fact, every function of the business must outline its program of activities for the period, justify their value to the business and appraise the cost and results thereof, and [fol. 3564] all of these judgments and estimates brought together, co-ordinated and summarized, comprise, for the Executives, a Provisional Estimate of the task and its probable results immediately ahead of the Bell Telephone System. The picture is by no means complete, for many unforeseen situations and contingencies will arise to modify the work as planned and the results expected. Estimates also are sometimes influenced by hope of accomplishment rather than by an analysis of the cold facts, but nevertheless a valuable fund of data has been made available.

The Use Made of the Budget Plan

This fund of information regarding the future of the business enables the administrative and executive officials to consider the soundness and wisdom of their policies and programs for the future. They must review the possibilities in respect of general business conditions, price changes, labor conditions and wages, the demands for service, the requirements for plant additions, improvements and replacements, the requirements for maintenance, operating and general expenses, depreciation, and taxes. They must give due consideration to unforeseen contingencies and make due allowance for estimates of the future based on scanty data. They must eliminate the non-essential in the plans as proposed. The adequacy of the present rate structures must be studied, the revenues expected from new developments must be carefully scrutinized, and a conservative appraisal made of the possibilities of increased revenues. The prospects of obtaining the new capital required must be considered and the probable cost thereof ascertained.

In brief, those who administer the business must obtain a full knowledge of what is involved in their responsibility for furnishing adequate and efficient telephone service for the future, whether their policies and the programs as proposed by the several functions can be executed, or whether [fol. 3565] they should be revised, modified or discarded.

However, beyond this they must satisfy themselves that the program which is finally adopted will yield a proper and reasonable amount of net earnings on the investment required, otherwise that program, no matter how splendidly planned, must fail, for investors will not long supply the additional capital required unless they are assured of the protection of their investment and an adequate return thereon.

In meeting these two major responsibilities, namely, adequate and efficient telephone service to the public and an adequate return to those who invest their labor and money in the business, the data provided by the Budget Plan furnishes the executives with a continuing basis for action. With its aid they can lay plans for the future and arrange for the conduct of operations in an orderly and economical manner from every viewpoint. A few of the advantages made possible may be mentioned.

From the viewpoint of future material requirements, when one stops to consider that the purchases of equipment and construction and other materials required by the Bell System now exceed $150,000,000 annually and that these for the most part are highly fabricated and specially manufactured for its purposes, it becomes evident that construction and service programs must be anticipated and requirements furnished to the suppliers at least several years in advance, in order that equipment and supplies may be manufactured and delivered under normal schedules. Time should also be available for reasonable foresight as to price changes, to enable a more liberal purchasing of materials during periods when prices are at relatively favorable levels. The supply of raw materials now used may become limited and it may be necessary to find new sources or substitutes if delay and inconvenience are to be avoided. Deliveries of material can be scheduled and made available by the supplier in an orderly manner so that no delay will result when work on a project is started. At the same time, the manufacture and delivery of equipment can proceed in [fol. 3566] such a way as to limit to the minimum the preliminary non-earning period of capital tied up therein.

From the viewpoint of construction and maintenance work for the future, large and important developments and projects can be studied and possible alternative plans considered to find the best and most economical way to meet

the desired result. Switchboards and installations must be engineered, and construction activities co-ordinated. Replacement and maintenance programs may be prepared. The necessary workmen can be trained in advance so as to be skilled and experienced in their work. The general demand for and supply of available labor can be analyzed and a continuous program of work arranged so that skilled labor may be continually employed. In brief plans may be made to conduct the necessary operations year after year on an even keel without undesirable changes in working forces and labor turnover.

From the viewpoint of operation, there is afforded an opportunity to study increased service demands, and if these require that methods of handling traffic be revised, or that new and better facilities be provided or new methods designed to meet the requirements, this can be done. The necessary operators may be trained and the source of supply analyzed to ascertain whether the needs of the System can be met or whether other methods of handling the traffic must be employed. Anticipated operating expenses of every type may be scrutinized and plans laid to ensure the latest and most economical methods.

From the viewpoint of revenues which are required to make possible the success of any program adopted, the Budget Plan provides an opportunity to plan carefully in advance for rate schedules which will be adequate and consistent with the quality of service rendered, yet reasonable in cost and adapted to develop traffic. New sources of revenue may be arranged by more effective and intensive [fol. 3567] uses of the service. Rate situations may be systematically studied and equitably adjusted so that expensive rate litigation may become necessary only as a last resort.

From the viewpoint of supervision, the data so made available affords an excellent means of checking actual performance. If the estimates take full account of all of the conditions under which the proposed work must be done, and its actual performance presents higher costs or other unfavorable conditions, an opportunity is afforded to check whether the work was done efficiently and economically, or whether it is properly organized and supervised; in brief, whether the desired result is being obtained at the lowest possible cost.

Finally, one of the major functions performed by the Budget Plan is to lay a sound foundation for financing. After the entire program for the immediate future has been summarized, checked and revised to a sound basis, consistent with the expected demands for service and conservative as to cost, the problem presented is that of financing the undertaking. All proposed activities must be resolved finally to capital costs and net earnings. If net earnings are not adequate to yield a proper return, one of two courses of action must obviously be taken—either more revenues must be made available or the program must be modified. The large army of investors in Bell System stocks and bonds—numbering upwards of half million—must realize as much on their funds in this business as from other forms of investment, otherwise their funds will be withheld. The Budget makes it possible to so plan the future of the business as to retain these investors and to interest others, while rendering service at a reasonable price.

The capital cost of any program approved must be obtained by new investments from those who are already investors and by developing new sources of capital, and to [fol. 3568] this end, the Budget permits a continuous forwardlooking financial program in respect of the large amounts of new capital required. During the past few years, these capital requirements have averaged upwards of $100,000,000 annually. To make available at the minimum cost to the Bell System, these immense amounts of new capital and to have funds on hand as needed is indeed a task of no small proportions. Consideration must be given to the best form of security to be issued—whether stocks, bonds or notes—and the most favorable time for issuing these must be determined. The conditions of the investment money market and the trend of and possible changes in interest rates must be critically considered. New sources of capital must be tapped and confidence must be established and maintained in the securities issued. The foundation must also be laid for future issues, since the business is a continuing one and the demand for telephone service shows no signs of slackening. But the task of financing can be carried to successful completion only if net earnings are and continue to be such as attract and hold capital in the business, and in this connection, the

Budget Plan appraises anticipated earnings and gives a basis for making every possible effort by sound planning and economies to make them adequate now and for the future.

The American Telephone and Telegraph Company and its Associated Companies comprising the Bell System have as their responsibility to society the task of furnishing a national telephone service. In performing this task the development of a well organized and intelligent force of men and women has been necessary and an investment aggregating over two billion dollars is now involved. The size of this undertaking has not come about by the personal desire of any one individual or group of individuals in the Bell System that the organization and structure which provides this essential service should be the largest of its kind, or that an enormous volume of service should be rendered [fol. 3569] as a business venture; rather, this structure has been made necessary by and created out of the demands of society that it be supplied with this indispensable instrument in the conduct of its business and social life. For the same reason, the business will assume even greater proportions, more complex service and operating problems will be encountered and much additional capital must be obtained.

This responsibility for the future can and will be met, but to that end a careful study of past performance is required, and careful and logical planning for the future must be in evidence, to assure that development and growth will proceed in an orderly, economical and stable manner. On this account, a continuous scientific Budget Plan, which lives and grows with the business and is always adapted to the needs of the time is indispensable.

[fol. 3570] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 29

Telephone Development of Large Cities, January 1, 1930

Country and City (or Exchange Area)	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones per 100 Population
New York	6,898,600	1,811,410	26.3
Chicago	3,360,000	987,891	29.4

[fol. 3571] EXTRACTS FROM EXHIBIT—DEPOSITION EXHIBIT #30

Pp. 150-163, Bell Telephone Quarterly, Issue of July, 1931, Entitled "Some Auxiliary Services and Facilities of the Bell System", by R. S. Coe

Western Electric Facilities

Of the facilities outside of the telephone service developed by Bell System engineers and made available through the Western Electric Company and its subsidiary, Electrical Research Products, Inc., the most famous is the talking motion picture equipment which has revolutionized the movie industry. Another is the new service for measuring noise which is described elsewhere in this issue of the Bell Telephone Quarterly.

The Public Address System enables speakers to address large audiences indoors or outside without straining their voices. It is used at race-tracks, stadiums, convention halls, overflow meetings, newspaper bulletin boards, etc., and for increasing the audibility of music at amusement parks and ball-rooms. There is also a Music Reproducer which magnifies the sound of photograph records for use in restaurants and other places of amusement.

The Western Electric Hard-of-Hearing System is a device with headsets installed in movie houses, churches and other auditoriums to enable those with defective hearing to enjoy the talkies, church services, speeches, music, etc. The volume of sound delivered is controlled individually by each user.

There is also an Electrical Stethoscope which magnifies the sound of heart-beats, thereby facilitating diagnosis in cases of heart-disease.

[fol. 3572] More directly related to telephone communication are the two-way radio telephone systems which the Western Electric Company manufactures for use between ship and shore and between aircraft in flight and ground stations. The Marine Radio Telephone Equipment is particularly useful for harbor craft such as tug-boats, ferry-boats, lighters, municipal fireboats and pilot-boats. It is also of value for fishing-craft.

The Aviation Communication Equipment is of two types: a low frequency system for receiving radio beacon signals

and weather reports, and a two-way high frequency radio telephone system which permits the plane to keep in constant touch with other planes and with ground stations. It is an invaluable aid to safe flying, as landing instructions and weather reports can be received en route.

The Western Electric Company manufactures a wide range of radio telephone equipment and has provided a majority of the large broadcasting stations in the United States.

It has likewise applied its telephone developments in the field of electrical recording to the making of electrical transcriptions for radio use, and it supplies broadcasting stations with the equipment to put on these so-called "spot broadcasting" programs, which are used by advertisers who desire to reach the territory covered by an individual station or a group of such stations.

The Western Electric Company also manufactures for [fol. 3537] the use of railroads, oil companies, mines and others, switchboard and other telephone apparatus and communication equipment. In addition, it provides the high speed submarine telegraph cables used in trans-Atlantic and trans-Pacific wire communication.

A Unifying Objective

All these various services and devices that the Bell System has developed, whether they are directly a part of the telephone service or by-products of it, have been worked out by Bell engineers for the service of the public. They are the products of the large numbers of highly trained specialists who are constantly planning how to make the telephone service more useful and how to develop new phases of service. Diverse as are the results of this research it has a unifying objective: to increase human knowledge of electrical communication and to turn the forces of nature to the service of mankind. Much has been achieved and more will certainly be accomplished in the future. Nothing has been said, for example, of Television because it is still in the experimental stage and Bell System engineers are unwilling to predict what its future sphere of service may be.

Richard Storrs Coe.

[fol. 3574] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #31

Pp. 2-12 Bell Telephone Quarterly, Issue of April 1922, Entitled "The Radio Telephone Situation", by A. H. Griswold

The Patent Situation

At the same time development by others of radio and allied equipment was taking place and, as might be expected, it was not long before it was found that the patent situation was considerably involved and that the public would be unable to obtain the full benefits of radio unless some arrangement could be made between the holders of the patent rights which would permit of unhampered development. Accordingly, at the request of the United States Government, the General Electric Company and the American Telephone and Telegraph Company entered into a cross-license patent agreement, effective as of July 1, 1920. In general, by this agreement the American Telephone and Telegraph Company received licenses in the field of commercial and public service radio telephony, while the General Electric Company received licenses in the field of amateur radio telephony at all radio telegraphy.

Following the execution of the principal agreement between the American Telephone — Telegraph Company and the General Electric Company an extension agreement was entered into whereby the General Electric Company may extend to the Radio Corporation of America any of the licenses which the General Electric Company received under the principal agreement, and likewise the American Telephone and Telegraph Company may extend to the [fol. 3575] Western Electric Company any of the licenses which the American Telephone and Telegraph Company received under the principal agreement. Subsequently, the Westinghouse Electric and Manufacturing Company, who also had been at work in the radio field, entered into the agreement in the same patent license fields as the General Electric Company and Radio Corporation of America.

Prior to all this, the Radio Corporation of America had been formed, had taken over the interests of the Marconi Company in the United States, and had entered into an agreement with the General Electric Company whereby it

acquired rights to use and sell all radio equipment which the General Electric Company was licensed to manufacture.

The situation today, therefore, is as follows:

In general, radio telephone equipment for commercial or public service uses is provided by the American Telephone and Telegraph Company or through its manufacturer, the Western Electric Company. Amateur radio telephone equipment, radio telephone broadcasting receiving sets, and radio telegraph equipment are manufactured by the General Electric Company and Westinghouse Company and are sold through the Radio Corporation. The underlying principle throughout this cross-licensing agreement is to insure and make available to the public the complete development of radio.

Radio Telephony a Supplement To and Not a Substitute For Wire Service

The interest of the Bell System in radio lies in whatever application it may have to the possible future development of telephone services. In the Bell System or any other system based on sound economic principles, the fundamental consideration in any communication problem is the provision of the type of facilities which will give the best and most economical service to meet the particular set of conditions involved. In this there is made no distinction between wires and radio, as the premise is the proper type [fol. 3576] of communication and the conclusion may be wires or radio. However, it happens that the inherent features of radio telephony are such that it has no economic or service application in the United States, or in any other place where conditions are similar, except as a supplement or auxiliary, in certain instances, to the wire service, but in no case a substitute therefor.

The real applications of radio are in communications across wide stretches of water, in ship to ship, in ship to shore, in airships to land, in possibly some other types of mobile stations, in some forms of broadcasting where the same communication is given simultaneously to a large number of people, and in remote cases where, due to geographical or other conditions, it is impossible or impracticable to place wire lines. All of these applications will be recognized as supplements to the regular wire service and

not substitutes for them. For the regular telephone services both local and long distance, for which wires are now so extensively employed in the United States, the limitations of radio are such that it cannot be used.

Radio Telephony Can Never Replace Universal Wire Service

The general telephone communication goal in the United States is universal service. This is merely a brief way of saying that any person, anywhere, at any time, can quickly, reliably and at a reasonable cost, talk with any other person anywhere else in the United States, and for this talk these two persons will have available facilities for their personal, private and uninterrupted use. Radio does not meet these requirements. It provides unguided transmission, sending out its message broadcast to anyone within range properly equipped to receive it, while wires, although they came first in scientific development, really represent the refinement of the art and provide guided transmission directed only to [fol. 3577] the person for whom intended. Scientifically it is actually more remarkable that we are able to guide messages by means of wires than to send them out broadcast by radio.

The number of communications which can be transmitted simultaneously by radio is narrowly limited.

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The words of the Secretary of Commerce, Mr. Hoover, at the recent Radio Conference in Washington are interesting and to the point:

"I think it will be agreed at the outset that the use of the radio telephone for communication between single individuals as in the case of the ordinary telephone is a perfectly hopeless notion."

Some Present Applications of Radio Telephony

Let us then consider some of the applications of radio telephony which in the present state of the art can now be foreseen. Between moving vehicles, ships, ships and shore, airships and ground, and similar classes of services radio telephony has an application. All of these are possible

fields, and as time goes on, it may be expected that they will be developed into useful auxiliaries to the wire service. Recently interesting and successful experiments on ship to shore transmission were conducted with the United States Steamship America, operating by radio in connection with our Deal Beach radio station and thence overland wires to New York and other points. These tests showed that ship to shore service is possible but whether or not it is established as a commercial service must necessarily depend upon its value, which must be great enough to make the service self-sustaining.

Transoceanic wireless telephony is, of course, possible, as was demonstrated by us in 1915. However, the present costs are very great and before it can be generally employed, the commercial value, as in the case of ship to shore, will have to be determined and assured. A factor operating [fol. 3578] seriously against such service is the great difference in time between countries located widely apart.

Broadcasting

One of the most interesting applications of radio telephony is that of broadcasting, which is not intercommunication but a one-way service. It is in this field that radio, by virtue of its inherent nature, seems to have great possibilities. At the present time broadcasting is being done by various departments of the Government, by certain manufacturers or agents of radio apparatus, by experimenters, by newspapers, and until recently by amateurs. The existing broadcasting transmitting stations are operating in the particular interest of the owners of such stations and are not providing broadcasting transmitting service for the use of the public in general. The American Telephone and Telegraph Company controls the important patents on radio telephone broadcasting transmitting equipment for general public use and consequently is being besieged with requests to sell radio telephone broadcasting equipment or to provide radio telephone broadcasting service. We are selling the broadcasting equipment and so many of these requests have been received that it has become apparent that if everyone who desires his own broadcasting equipment should purchase it, there will soon be so many broadcasting stations all operating on the same or a comparatively few

number of wave lengths that real service from any of them will be impossible. Accordingly, we are now establishing in New York on the Walker-Lispenard Building a broadcasting station of the latest and best type known to the art. It is not planned that we put on any program ourselves but [fol. 3579] rather provide the facilities over which others may broadcast at specified rates. We could doubtless provide and broadcast a splendid program, but by such a procedure we would be inviting the public to purchase receiving equipment in order to hear our program and we would be committed to the indefinite continuance of a service for which no revenues would be received. By providing facilities for the use of others it rests with those who broadcast to furnish a class of program to which the general public will desire to listen. It is thought that in this manner the true attitude of the public toward broadcasting may be determined, as it is realized that at present the public is in a more or less optimistic state of mind, and that broadcasting must be placed on a much more sound basis if it is to remain as a valuable service.

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The Bell System and Radio

While we have important exclusive rights protected by patents, our interest in the extension of our field of service overshadows any interest in any patent or group of patents. Above all, we do not want to obstruct the work or play of scientists and amateurs. Progress follows experiment and use. In this new art we should experiment and encourage the experiments of others but without prejudice to later enforcement of our rights if and when such enforcement becomes necessary to the efficiency of a public service.

The question of most interest in the Bell System is naturally—"What do we propose to do with radio?" We propose to keep in mind our main purpose which is to furnish to the people of the United States as wide a range of communication facilities as possible. It may mean service with ships, railway trains and airplanes. It may mean a transatlantic service, but promises cannot now be made. It may mean broadcasting, the future of which can- [fol. 3580] not be determined as yet. It should be remembered that radio telephony, with its scope definitely limited

by natural conditions, has only reached an elementary stage, even in its possible fields. Bearing in mind our fundamental policy of providing the best and most economical type of facilities to meet any given set of conditions, we shall continue our work of developing whatever possibilities there are for radio in the field of telephone communications.

[fol. 3581] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 32

Pp. 13-22 Bell Telephone Quarterly, Issue of April, 1922, Entitled "The Work of the Bell Telephone Securities Company", by D. F. Houston

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This wider distribution of Bell System securities will add to the number of those who have safe investments. Customers who became shareholders, will take an interest in the Bell Telephone Companies and will acquire an understanding of their problems and needs. It will also lay broader financial foundations for the Bell System, and will aid it to secure, at a lower cost, the money needed for extensions of the service.

[fol. 3582] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 34

Pp. 238-252 Bell Telephone Quarterly, Issue of October 1926, Entitled "Some Problems of Statistics and Economic Research in the Bell System", by C. A. Heiss

Problems Related to Analysis of Current Operations

The first of these main classifications concerns statistical problems related to the study and analysis of current performance and results throughout the business, to the end that high standards of efficiency and economy will be maintained in all operations. The types of statistical problems which fall under this classification may perhaps be grouped under three heads, which correspond to three of the four general objectives of the telephone business men-

tioned by Mr. Gherardi at the opening session of the Conference; namely, first, to give satisfactory service to the public, second, to render this service at the lowest possible cost, and third, to produce a fair return upon the value of the property. Accordingly, I shall mention examples of problems under each of these heads. * * *

Budget Problems

Of foremost importance among these problems are two to which I have already referred, namely, the forecasting of future economic and financial conditions insofar as these may be anticipated, and the statistical measurement of the probable effect of these conditions upon various elements of the telephone business. In addition, statistical estimates must be made of the population growth in the territory to be served, not only as to amount of growth but also as to the economic characteristics of the new population. [fol. 3583] These population studies must then be resolved into estimates of the future number of telephone subscribers and the future demand of these subscribers for telephone service, measured both in terms of number of telephone calls of each of the various classes of service and in terms of revenues. On the basis of these estimates of service requirements, a construction program must be developed to provide not only for necessary replacement of present plant, but also for the additional facilities which will be required. Estimates must also be prepared as to costs of handling increased traffic and costs for the maintenance of plant. These and many other related factors must then be resolved into specifications of material and labor requirements, capital expenditures and operating expenses. In fact, every function of the business must develop a statistical program of its activities for the Budget period. The result is a statistical forecast of each of the major items of revenue and expense, and these when properly coordinated and combined furnish a comprehensive picture of expected net earnings and the probable net capital requirements which must be provided through a properly coordinated financial program.

[fol. 3584] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 35

Pp. 23-33, Bell Telephone Quarterly, Issue of January, 1926, Entitled "1925-1926; an Economic Review and Outlook", by F. E. Richter

The second quarter of the year saw the tide turn in two outstanding industries—automotive and construction—and in the stock market; and by the end of the third quarter, the flood tide was running strong for industry as a whole.

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Present day students of business conditions in this country will turn their attention to some of the events of the second half year as affording the key to the current and immediately future significance of the year. As every one knows, the outstanding events of the second half of 1925 were the spurt in construction activity, a remarkable increase in automobile sales and output (following announcements in the summer of many new models, many price cuts, and plans for facilitating buying on time), and an astounding bull market in stocks; absolute new high records being established in all three of these fields of activity. For each of these developments easy money has by some been given the lion's share of the credit (or blame). It would be idle to deny the part played by a surplus of available credit in helping to bring about the great speculative building and stock market operations and the financing necessary to make possible large volumes of installment buying, not only of automobiles but of many other commodities, from houses to clothes. Banking statistics clearly reflect the assistance given to the bull market by a greatly enlarged volume of loans on stocks and bonds. But neither commercial nor savings bank statistics by any means reflect equally clearly the greatly increased volume of business activity in 1925 over 1924, or reflect what might be expected to be the effect of enormous building activity and a great [fol. 3585] growth of installment buying. The truth of the matter seems to be that along with a large volume of spending there has gone also a large volume of saving and investment, and that to credit either the solid, constructive achievements or any excesses of 1925 almost entirely to a super-

abundance of bank credit is to overlook an important fundamental factor in our present economic situation.

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Trade, Banking, Finance

Domestic trade, as has been suggested, was maintained at a high elevel during 1925. To this, the increased purchasing power of the farmers doubtless contributed much. The widespread habit of installment buying also did much to increase the volume of sales of many sorts of commodities. Underneath it all, however, was the high standard of economic welfare, the large spending power of the country as a whole. All-inclusive indexes of retail trade are not available, but there can be no doubt of the extraordinarily large volume of consumer buying which went on in 1925. In the field of foreign trade, increases were registered in 1925 in both exports and imports, though there was a much larger increase in the latter than in the former. The great industrial activity of the year called for large imports of crude materials. Largely due to extraordinary imports of rubber and silk at relatively high prices, the Continent of Asia, for the first time in our history for a whole calendar year, has apparently supplied imports of a greater value than did any other continent. The maintenance of a volume of exports to Europe which accounted for more than 50% of the total of all our exports was doubtless assisted by the large volume of European securities floated in this country. The value of exports of finished manufactures continued the steady growth which it has maintained ever [fol. 3586] since 1921, in the face of changing conditions both here and abroad. The year witnessed a substantial net export of gold.

Aside from the great increase in loans on stocks and bonds, accompanying the bull market in stocks, developments in banking in 1925 were interesting principally for the absence of anything of spectacular character. The gold exports were almost without effect on our credit structure and, as has been said, the great volume of business activity hardly seems to be adequately reflected in the fairly moderate increase in outstanding bank credit, though it is fully reflected in a great increase in the volume of credit turnover as measured by statistics of check clearings. The most

interesting thing that did not happen was any rise in the rediscount rate of the Federal Reserve Bank of New York above the 3½% rate, established in February. Elsewhere in the reserve system the rediscount rates were made uniform at 4%. At no time during the second half of the year did the investment policy of the Federal Reserve Bank of New York indicate that a rate increase by that institution was forthcoming. At their first weekly meeting of 1926, however, the directors of the bank raised the rate to 4%.

In the allied field of finance, the year 1925 witnessed not only a high record volume of transactions on the New York Stock Exchange and high record average prices for industrial stocks, but a record volume of new security offerings for account of domestic corporations, and a volume of foreign financing that was somewhat in excess even of the large total of 1924. During the greater part of the year little difficulty was found in distributing new securities, either bonds or stocks. It is interesting to note that in only one calendar quarter since 1920 (the third quarter of 1922) has bond financing failed to represent at least 50% of the [fol. 3587] total volume of financing by corporations. This extraordinary situation obtained through 1925. General security market and credit conditions were doubtless responsible for the year being characterized by a large number of mergers and consolidations not only in the industrial field, but also among public utilities; while among the railroads various consolidations, mergers or purchases were submitted to the Interstate Commerce Commission for its approval under the Transportation Act of 1920. As Secretary Mellon indicated in the passage from his report, quoted earlier in this article, corporate profits generally have run high during 1925, at least in aggregate volume, though there has been a certain amount of complaint about unit profits being a bit low. Partly because of the large volume of traffic and partly because of increased operating efficiency, the railroads have made a better showing than they have for some years and have therefore shared with other corporations in the general prosperity. The business failure record in 1925 was rather less favorable than might perhaps have been expected in a year whose general characteristics were those which have been outlined in the preceding paragraphs.

[fol. 3588] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 36

Pp. 9-20, Bell Telephone Quarterly, Issue of January, 1927; Entitled "1926-1927; an Economic Review and Outlook", by F. E. Richter.

Financial Condition

Of money and of financial conditions generally in 1926, we have yet to speak. Short-term money rates of all kinds ruled at almost all times during 1926 at levels above those for the corresponding periods of 1925. The final month of the year was the outstanding exception to this general statement, for money in December, 1926, tended to be somewhat easier than in December, 1925, in spite of the fact that in the meanwhile the volume of all bank credit extended by the commercial banks of the country had very greatly increased. Receding business and prices and the generally liquid condition of most industries, added to the fact that investors had apparently taken off the banks' hands, and paid for out of savings, not only some investments but also a substantial volume of security loans, doubtless were among the principal factors which brought about the year-end ease. Although, subject to seasonal fluctuations, the tendency of money rates has been slightly upward during the year, there has at no time been the slightest danger or apprehension of a credit stringency. The character of the money market is perhaps epitomized by reference to the fact that 1926 has been the only full calendar year since the formation of the federal reserve system in which not a single federal reserve bank, except the New York institution, made any changes in any of its discount rates throughout the year. The federal reserve open-market policy, like the discount rate policy, was one of relative inertness all year. Perhaps the most interesting result of federal reserve policy was the fact that for the [fol. 3589] first time since 1922 the system added moderately to its gold reserves during the year by paying out federal reserve notes in response to demands for currency, thereby reversing the process which had been pursued for four years. During the latter part of the year the federal reserve ratio for the system as a whole was above that of a year previous.

The securities markets reflected credit ease, the large volume of savings available for investment, and the prosperous conditions and profitable operations of business. Industrial stock price averages rose to the highest figures on record, and railroad stock price averages went above any figures registered since before the war. High grade bond prices rose and yields declined during the greater part of the year, and at the close, high grade corporate bonds generally were selling on the lowest yield bases at least since our entry into the war, if not since the war began. This came about in spite of a record volume of offerings of new securities to finance the large construction and expansion programs which were put through during the year, and in spite of the fact also that both the federal reserve banks and the reporting member banks of the federal reserve system disposed of securities on balance. As against these latter influences were the circumstances that the Federal Government in the course of the year reduced its interest-bearing debt by over one billion dollars, and that the net effect of our loans abroad and foreigners' payments to us on account of interest, principal, and repurchase of their own securities may have been a balance of payments actually in our favor, and quite certainly was a balance more favorable to us than in 1925.

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[fol. 3590] The Prospect

The year 1925 ended with business and profits rising to new high levels. The aggregate volumes of both business and profits in 1926 have doubtless exceeded even the favorable records of 1925. The year is ending, however, with business and profits declining, not rising, as they were twelve months ago, and the number of business failures is apparently increasing in more than usual seasonal proportions. The new year will open with at least the following important factors in its favor; abundant and relatively easy money; a high volume of general purchasing power, apart from certain agricultural districts; few conditions of unwieldy inventories; benefits accruing from the advances made during 1926 in operating efficiency in the use both of labor and of plant and equipment; the healthy financial condition of the railroads and the high prices

of their stocks, which will enable them to raise money easily for construction or expansion programs, if they so desire; and a gradual, if slight, improvement in European conditions. Unfavorable or neutral factors include the following: the current tendency for profits to decline and failures to increase, and the certainty that keen competition in 1927 will tend further to narrow profit margins; clear signs of overbuilding in certain parts of the country and in certain types of edifices; the probability that the automobile industry, despite its ever-growing capacity, will not be able to duplicate its volume record of 1926, much less exceed it; the softness of commodity prices, diminishing business men's confidence, and tending to induce curtailment, apart from its effect on the profits of those who produce the commodities; in particular, the unsatisfactory prices of some of the leading agricultural commodities; the posibility of a serious bituminous coal strike beginning on April 1st; and the probability that such stabili-
[fol. 3591] zation measures as are taken in Europe during 1927 will tend to have immediately depressing influences rather than otherwise, and not improve European purchasing power, except as this is stimulated by foreign borrowing.

A serious business recession in 1927 seems quite unlikely, but the balance of probabilities deduced from the foregoing would seem to lead to the conclusion that during the first part of 1927 at any rate business will fail to maintain the high record of activity set in the last two years.

[fol. 3592] Extracts from Deposition Exhibit 37

Bell System Technical Journal, Issue of October 1925, Entitled "Journal Engineering Problems of Bell System", by H. P. Charlesworth, American Telephone & Telegraph Company

Engineering Cost Studies

Owing to the complexity of the problem of suitable advance planning for the growth in the telephone plant as already discussed, it is evident that in the study of plans for specific projects, selection must generally be made be-

tween a choice of arrangements, more than one of which might satisfactorily meet the requirements of the service. It is usually necessary, therefore, that two or more practical plans or programs for construction must be compared so that the most advantageous plan may be selected. An important factor in the selection of all of these cases is a study of the relative economies of the different plans; that is to say, a comparative cost study and as these studies form such an important part of our engineering work, I believe it will be of interest to devote a few moments to a description of the important considerations generally involved.

[fol. 3593] These engineering cost studies require analysis and consideration of the cost and resulting annual charges for different amounts and types of plant included under each plan. The annual charges comprise items of expense incident to ownership of plant and those that are incurred each year after its installation to keep it in operation and in serviceable condition. As a general thing, in these cost comparisons, another interesting factor is also present; namely, most of the plans which are compared call for expenditures to be made at different periods. For example, one plan might call for erecting a new building at a new location immediately; whereas under the other plan being considered, the necessary additional space required could be secured by adding to an existing building and deferring the complete new project for possibly five or ten years. The relative economy of the plans, therefore, cannot be determined directly by a detailed comparison of the expenditures involved or resulting annual charges, but it is necessary in order to give a fair comparison to express the relative costs of the different plans in terms of present worth, or equivalent annuities which give figures for the total expense in which accurate allowance is made for the variation of expenditures with respect to time.

[fol. 3594] These engineering cost comparisons may be considered as composed of four parts or operations; namely, the premises or known factors and assumptions; the formulation or set-up of the problem; the solution or mathematical calculations and finally the interpretation of the results. The determination of the premises and formulation of a given problem is, of course, a matter specific to that problem, and here the engineer must exercise sound

judgment, for unless the assumptions upon which the work is based are reliable the study itself is of little value. The mathematical calculations are, of course, a definite thing. However, the interpretation of the results must always be a matter of engineering judgment and full weight must be given to those factors which by their nature cannot be evaluated in the cost comparison.

A cost study is a fundamentally important tool in assisting the engineer to reach a decision as to the most desirable plan or program, but as indicated it cannot be used to replace the exercise of judgment on his part. The solution of an engineering problem is, in general, not a matter that can be demonstrated mathematically as can, for example, the proposition, that the square of the hypotenuse of a right triangle is equal to the sum of the squares of the two sides. An engineering study rather requires in addition to all of the definite facts that can be brought to bear on the question the exercise of sound judgment on the part of the engineer in weighing the results of the cost study with all related business or other factors bearing on the problem.

Some factors involved in these engineering studies are often of a character which do not permit of expression as a direct charge against a given plan, but must be considered on a broader basis such as the difference in quality or dependability of the service, etc. Also it is important to keep [fol. 3595] in mind, for example, that, other things being equal, a plan requiring large investments has disadvantages as compared with one requiring a smaller investment so that even though the plan involving a larger investment may prove in from the cost study by a small margin, it may be desirable to adopt the alternative plan so as to avoid tying up considerable amounts of fixed capital. Another question to be kept in mind in interpreting cost studies is whether the more expensive type of plant, usually a higher type of plant, can be adopted satisfactorily at a later date or whether the decision to be made at the present time precludes its adoption later. In the former case it is often wise to go further in deferring fixed capital expenditures than in the latter case. Finally, throughout all of his work the engineer must have foremost in his mind the fact that the telephone system exists for the purpose of furnishing service to the public and the results of his engineering effort

should insure a service which is satisfactory from the subscriber's viewpoint.

It is evident from what has been said, I believe, that these engineering cost studies are of great benefit in working out the proper procedure in our engineering work, and I assume they are equally helpful in the engineering of any kind of growing plant. Anything that can reasonably be done, therefore, to give the student an appreciation of the nature, scope, and application of the economic considerations of these engineering problems and to develop his faculties of judgment, imagination, team play, and other related qualities, will doubtless prove of great value to the student in his later engineering work.

[fol. 3596] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 38

Pp. 542-560 Bell System Technical Journal, Issue of October, 1925, Entitled "Engineering Planning for Manufacture", by G. A. Pennock

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The General Manufacturing Department of the Western Electric Company provides the Bell System with telephone equipment which involves the production of over 13,000 separate and distinct forms of apparatus, in the construction of which there are used over 110,000 different kinds of parts made from 18,000 different kinds, sizes, and shapes of raw material. A number of these parts are produced in very small quantities.

* * * * * * *

Planning for the Future

As the manufacturing unit of the Bell System, the Western Electric Company in planning its production has had to bear in mind, first, that the facilities shall be adequate to turn out the tremendous volume of apparatus and equipment required from year to year; second, that the System's supply of equipment must be planned to eliminate, so far as is humanly possible, any interruptions; and third, that the System must get its equipment at the lowest possible cost.

Briefly, our program for providing buildings and equipment for the future is based on a five-year forecast of business made by each Associate Company and summarized by the American Telephone and Telegraph Company.

It takes approximately two years to erect and equip new buildings; consequently, capacity studies on floor space are made two years or more in advance and tool and ma- [fol. 3597] chine equipment studies are made one year or more in advance, as this equipment can usually be provided in one year.

Tools

The annual demand for the product is the most important factor in determining the kind of tool, fixture, and gauge equipment to be provided.

Our most intricate engineering problems arise in connection with punch press tools as there is almost no limit to the variety of operations that can be performed on this type of machine.

If the demand for a part made on a punch press is small, it is often found more economical to build simple tools which will blank out, perforate and form in separate operations, rather than to build more elaborate tools at a higher cost which will combine two or more operations into one.

The effect of quantity on the design of tools may best be shown by a concrete case.

[fol. 3597½]

The Effect of Annual Demand on Choice of Manufacturing Method

Yearly Req.	Material	Type of Machine	Type of Tool	Tool Cost	Cost per M	Tool Cost per M Parts	Saving per Year
5,000	5/8" Brass Rod	Hand Screw Machine	General use Tools	.....	$10.00	....	.....
30,000	1/15" Sheet	Punch Press	1 at a time Tandem Perforating and Blanking	$150.00	2.30	$5.00	$231.00
500,000	" "	" "	3 at a time Tandem Perforating Perforating and Blanking	400.00	1.72	.80	290.00
3,000,000	" "	" "	7 at a time Tandem Perforating and Blanking	600.00	1.52	.20	600.00

Fig. 5

Take, for illustration, the case of a simple brass washer 5/8" in diameter, 1/16" thick and having a 1/4" hole. As shown in Fig. 5, with a requirement of 5,000 a year, the washer would be made from rod stock in a hand screw machine using general use tools at a cost of $10.00 a thousand; for 30,000 a year it would be made from sheet stock in a punch press using a one-at-a-time tool, at a cost of $2.30 a thousand; for 500,000 a year a three-at-a-time tool would be used at a cost of $1.72 a thousand; for 3,000,000 a year a seven-at-a-time tool would be used at a cost of $1.52 a thousand.

In each one of these steps, as shown in the columns at the right, the additional tool investment, necessitated by the more advanced method, would be liquidated in one year by the decreased manufacturing cost.

[fol. 3598] DEPOSITION EXHIBIT #39

Pp. 1-14 Bell System Technical Journal, Issue of January, 1925, Entitled "Engineering Cost Studies", by F. L. Rhodes[1]

Introduction

The subject assigned to me in the "Notes Regarding the Program of the Conference" is "The Theoretical Principles of Economic Studies and Their Possible Application in Undergraduate Courses." With your permission, I shall digress somewhat from a literal consideration of this title. I shall not undertake to derive formulæ, to set up equations and to obtain maxima and minima from them. The mathematics can readily be obtained from available sources. On the other hand, I shall attempt to outline the field for economic studies in engineering work, using illustrations drawn from telephone engineering practice.

What is an engineering cost study? When you or I reach a decision to purchase a certain pair of shoes, making

[1] Notes of a Talk given at the Bell System Educational Conference, August, 1924.

a selection from an assortment ranging in price from (say) $5 to $15, we have performed, consciously or unconsciously, some of the reasoning of an engineering study. Among the factors influencing our decision [redacted] probable length of service life of different pairs, [redacted] ability to extend this by an expenditure, to be [redacted] future time, for maintenance as represented [redacted] soles and heels, which, perhaps, can be applied economically to a moderately costly pair but not so to the cheapest.

These two elements, depreciation and current maintenance, are factors entering into engineering cost studies but they are not all of the factors. Whether we have the necessary capital in hand, or are obliged to hire or otherwise raise it, the annual cost of the capital must be taken into consideration, and treatment of the matter of depreciation is incomplete without consideration of salvage value and cost of removal.

Thus, unless we pursue our investigation into details that are not ordinarily considered when buying shoes, it is [fol. 3599] evident that our homely illustration, while serving to center our attention on certain important subjects to be taken up in this paper, falls short in respect of others that can not be neglected in engineering cost studies. Broadly speaking, engineering cost studies deal with the comparative annual costs of alternative projects. Frequently they also involve comparisons of expenditures to be made at different times in the future. They are of value to industrial executives in assisting them to arrive at decisions where several courses of action are open, but they are not the sole guides in arriving at decisions. No hard and fast formulæ can take the place of judgment based on experience. Formulæ of this nature are properly used as guides to assist judgment.

The necessity for guidance from studies of this kind arises not frequently in a growing plant. The telephone plant always has been, and so far as we can anticipate, will continue to be a rapidly growing thing.

This means that whenever an addition is to be made, the question arises, how much capacity for growth is it most economical to provide for? As an illustration of this, consider with me the problem that arises when it becomes necessary to place somewhere an underground cable. Obviously it would be uneconomical to construct an underground

conduit of one duct for this cable and next year or the year after to dig up the street and lay another duct for a second cable and so on in piecemeal, hand-to-mouth fashion.

On the other hand, it would not be economical to estimate the number of cables that would be required in a hundred years, even if we could foresee the needs so far ahead with any degree of certainty, and to place at the outset sufficient ducts to care for all the cables required along that route in the next century, for in that event, the carrying charges on the idle ducts would prove much more expensive, in the long run, than would additions made at infrequent intermediate times. Somewhere between one year and one hundred years is the most economical period for which to provide duct capacity in advance. The determination of this period, based on suitable construction costs, the expected rate of growth in cable requirements, and other factors is one of the useful results obtained from an engineering cost study.

Under our organization, practically all types of plant and equipment are developed by the Central Staff. These are standardized in a range of sizes sufficient to meet all the needs of the business.

The choice of standards and sizes to meet specific situa- [fol. 3600] tions arising in the field is made by the proper officials of the associated operating companies.

If a piece of apparatus or equipment, correctly designed within itself, is installed in the wrong place, or if a wrong size is selected, loss will result.

Questions of where to place plant and what size to employ, and when to replace existing plant constantly confront the operating engineers in the field. In the telephone business every major construction project is described in what we term an "estimate" which is nothing more or less than a detailed design for the project, embodied in drawings and specifications, accompanied by a carefully prepared estimate of its cost. These estimates originate in the Plant Departments of the Associated Companies and are really the bids of the construction forces for performing the work. These estimates pass through the hands of the Chief Engineer of the Associated Company for his scrutiny and approval before they proceed to the higher officials of that company for final authorization. The Chief Engineer considers these estimates in their relation to the

general plans of the Company with reference to the growth of the business and the plant. For many years the chief of the Department of which I am a member, Vice President General John J. Carty, occupied the post of Chief Engineer of the New York Telephone Company, the largest associated company of the Bell System. I have heard him say that when, while occupying that position, an estimate for some specific piece of work came before him for review, he asked himself three questions regarding it:

1. Why do it at all?
2. Why do it now?
3. Why do it this way?

Rigorous proof sufficient to answer these three questions will justify the endorsement of any engineering project, and, furthermore, each question generally involves an engineering cost study.

Fundamental Plans

Of all the engineering cost studies that are made in connection with the telephone industry, none is more far-reaching in its effect than those involved in what we term our "fundamental plans." In order to give a fair idea of the importance of the work done under our fundamental plans, it will be necessary to describe briefly what a fundamental plan is.

[fol. 3601] In completed form a fundamental plan shows what the general lay-out of the telephone plant in a city is expected to be at some definite time, usually from 15 to 20 years in the future. It shows:

(a) The number of central office districts that will be required to provide the telephone service most economically, and the boundaries of these central office districts.

(b) The number of subscribers' lines to be served by each central office.

(c) The proper location for the central office in each district to enable the service to be given most economically with regard to costs of cable plant, land, buildings and other factors.

(d) The proper streets and alleys in which to build underground conduits in order to result in a comprehensive,

consistent and economical distributing system reaching every city block to be served by underground cable.

(e) The most economical number of ducts to provide in each conduit run as it is built.

These are all very definite problems that confront the executives of our Associated Companies when plant extensions are required. Our experience has shown that our fundamental plans reduce guessing to a minimum by utilizing the experience of years in studying questions of telephone growth, in order to make careful forecasts on the best possible engineering basis. A few words as to how fundamental plans are made may not be out of place.

The basis of the fundamental plan is what we term a commercial survey, which is a forecast of the future community showing the probable amount, distribution and character of the population and the probable market for various classes of telephone service.

Before making this forecast, it is important to know what are the present conditions as to population and use of the telephone service. To ascertain these facts a census of the community from a telephone point of view is made. Present telephone users are classified into:

Residence Telephones.

Business Telephones in Residence Areas.

Telephones in Business Section.

In analyzing Residence telephones all families are divided among those occupying:

(a) Private Residences.

(b) Two-family Houses.

[fol. 3602] (c) Apartments.

(d) Lodging Houses.

In each class, subdivisions are made according to the rent paid as it has been found that a close relation exists between rent and the class of telephone service used. Business telephones are divided into 20 or 30 different classes. An important factor in the forecast is the future population of the city, both as a whole and by sections.

This involves, in each particular problem, not only study of the past growth of the city in question, but also careful and detailed comparisons with the growth history of other cities where conditions have been such that the experience

in those places is useful in making the prediction for the city being studied.

Having arrived at forecasts, for certain future dates, as to the number of telephone users to be provided for, where they will be located, what character of service they will require, what time of day they will call, and how frequently, and where they will call, it becomes a definite, although intricate engineering problem to determine the most economical number, size and location of buildings and switchboards and the location and size of conduit runs. All of the promising combinations of future offices and districts as indicated by experience and the geographical characteristics of the city, are laid out on working maps and the annual costs are figured. The arrangement which gives the lowest equated annual costs over the period of time for which the study is made is, in general, the one which is adopted. Fundamental plans are reviewed every few years, particularly when some major plant addition, for example, the opening of a new central office, comes up for consideration. In this way we are constantly looking ahead and following a coordinated plan; but this plan is not a rigid, fixed thing. It is modified as frequently as may be necessary to meet the constantly changing requirements. In work of this kind, future expenditures must be given greater or less weight accordingly as they are required to be made in the near future or at some more distant time. This is taken into account by equating future expenditures in terms of their present worth; that is, the sum in hand, at the present time, which, at compound interest, will be just sufficient to provide for the future expenditures when they are required.

Transmission Standards and Studies

An interesting and typical annual cost problem which arises in connection with fundamental plans is that of ob- [fol. 3603] taining a proper cost balance between the circuits employed for subscribers' loops and those employed in interoffice trunk lines. The larger the wire, the better will be the talk. But it will also be more expensive. The first step in solving this problem is to decide how good the transmission must be to afford satisfactory service to the telephone using public. Our present standards are a mat-

ter of growth; the accumulated results of long and extensive experience. They are live, working standards constantly being intelligently scrutinized and, when necessary, modified. A discussion of the values of the standards employed would unduly prolong this paper. Therefore, let it suffice, at this time, to state that the telephone offices in a large city, including its environs, may be divided into metropolitan offices and suburban offices; that is, the central busines offices separated from the suburban residential offices. Between subscribers in different districts suitable standards of transmission are decided upon.

Before describing this study further, reference must be made to the practical necessity for the standardization of construction materials. Subscribers' loops run in length from a few hundred feet to 3, 4 or 5 miles. If we tried theoretically to make all talks exactly equal in loudness, we should have as many different sizes of wire in our cables as there are different lengths of loops. To reduce the complexity, our cable conductors are of certain standard sizes, which experience has shown are sufficiently close together to meet the needs of the business. These standard sizes, in American Wire Gauge, are Nos. 24, 22, 19, 16, 13 and 10; the three latter not being used in subscribers' loops.

Having adopted standards of transmission and standards of cable conductor sizes, our problem is to obtain the standards of transmission with the standards of cable conductors in the most economical manner.

The method of doing this, in brief, is to figure out the annual costs which would be incurred in doing it a number of different ways and to select the way that gives the lowest annual cost. In this kind of a study, which we call a "loop and trunk" study, it has been convenient to designate the subscribers' loops by their maximum circuit resistance. Adopting this form of designation, it may be assumed, first, that all of the subscribers' loops will have an average transmitting and receiving efficiency as good or better than a 350-ohm loop; as a second assumption, that they will be as good or better than a 400-ohm loop; and, as third and fourth assumptions, 450 and 500 ohm loops, respectively. In assuming, for example, a 350-ohm loop in No. 24-gauge [fol. 3604] cable, it is, of course, necessary that all subscribers having loops longer than the amount of No. 24-gauge cable represented by this resistance shall be put in No. 22-gauge or No. 19-gauge cable as may be required.

The transmission losses, both transmitting and receiving, are then computed for the assumed loops. The transmission losses in central office apparatus are constant and known. Subtracting the losses in the offices and in the substation loops for each assumed grade of loop from the transmission standards, leaves the amount of transmission loss which can be allowed in the interoffice trunks corresponding to each limiting grade of subscribers' loop. On the basis of this allowable tranmission loss in the trunks and knowing the distances between central offices, we are enabled to fix the size of conductor required in the trunks.

Knowing the grade of loops and trunks required for each of the above assumptions, we can then compute the total annual charge of giving service according to that assumption. If the assumptions have been wisely chosen it will usually work out that the first assumption, that is, a very high grade of subscribers' loop, will not be as economical as some others, due to the relatively high cost of the subscribers' loops taken as a whole. Neither will the last assumption, that is, a very low grade of subscribers' loop, be the most economical, on account of the relatively high cost of the trunks. Somewhere between, however, there will be some assumption which will show the smallest total annual charge.

To find more precisely the most economical arrangement, the various values are plotted with the assumptions as to subscribers' loops forming one set of ordinates and the total annual cost forming the other. The point on the curve representing the lowest annual cost then indicates the proper grade of subscribers' loops to employ. In the case of the longer interoffice trunks, loading is, of course, employed. In the design of toll lines and toll switching trunks generally similar cost balancing methods are employed.

In many cases, the problem can be solved by the determination of what we term "the warranted annual charge" of transmission which may be defined as the annual cost of improving the talking efficiency of the circuit in the cheapest way by a definite small amount. By means of studies of this kind, we obtain a plant closely approximating a balanced cost condition. That is, in such a plant, a dollar can be spent in improving transmission efficiency, no more effectively in one part than in another.

[fol. 3605] Other Applications of Engineering Cost Studies

From what has already been said, it should not be inferred that the sole application of engineering cost studies is in connection with the problems arising in the operating field. The question whether or not a more efficient piece of apparatus at a higher cost is warranted enters into most of our development problems. The economies of the case lie at the root of our development work in all portions of the plant.

At this point I should like to call attention to the fact that our development work covers not only what are termed "transmission" matters, but also very important problems in switchboards, outside plant and other phases of the business.

The service which we provide is a communication service, which involves important problems affecting the means for connecting and disconnecting the parties as well as those other important problems, to which your attention has been particularly directed, relating to the loudness and quality of the transmitted speech.

In cable design, particularly in the case of intercity cables and interoffice trunk cables, the average separation between wires in the cable affects the electrostatic capacity of the circuits and there is a definite capacity which represents the most economical degree of concentration of the wires in the cross-section of the cable. The spacing and inductance of loading coils presents another problem in balanced costs. Even in the case of wooden poles we make use of economic cost studies.

The length of life of a pole depends upon a variety of factors, the most important of which are the character of the timber; whether or not a preservative treatment is employed and, if so, the nature of the treatment; the local climatic and soil conditions and the original size of the pole.

The strength of a pole varies with the cube of the diameter of the sound wood at the weakest section. If the original size of the pole is only slightly more than the critical size at which replacement should be made, the life of the pole will be very short, as decay will reduce the size at the ground line to the critical size within a few years. On the other hand, a pole of huge size at the ground line would have a very long life before rotting sufficiently to

require replacement, but the first cost of so stout a pole might readly be so great that its annual cost would exceed that of a smaller and cheaper pole. In our specifications for poles we have constantly to bear in mind that the elimi- [fol. 3606] nation of poles containing timber defects of one kind or an another means that we are adding something to the first cost of our poles and the criterion must always be whether or not the elimination of these defects will sufficiently prolong the life of the poles to warrant the increased first cost.

There have now been placed before you several examples of problems occurring in the telephone industry in the solution of which engineering cost studies may be advantageously employed, and, probably, enough has been said to make clear the importance of this form of economic analysis.

Factors Entering into Annual Costs and Their Evaluation

Let us now consider together the principal factors entering into annual cost, and how, in the course of our work, we evaluate them.

The several factors are these:

1. Cost of money.
2. Taxes.
3. Insurance.
4. Depreciation.
5. Current Maintenance.
6. Administration.
7. Operating Costs.

Cost of Money.—The operating companies of the Bell System obtain the new money that they use in extensions to their plants from the sale of their capital stock and securities—bonds and notes. Such a return must be paid the investor, by the Company, as will induce a constant flow of new capital into the business. This steady influx of new capital is required because the System can not decline to expand. It is obligated to meet the increasing needs of the public it serves. Its need for new capital is a direct result of public demand for the service it renders. The rates for service which public utilities may charge are regulated by the commissions, but neither the commissions nor the utilities can fix the worth of money. Public utili-

ties must pay the cost of money just as they must pay the cost of labor, poles and other material. No investor can be forced to invest. If the rate is below what money is worth in the general money market, he will keep out. Utility companies must bring their offerings to a general money market and submit them, in open competition, with [fol. 3607] the offerings of undertakings of every kind requiring capital. There are two ways of getting new money:

1. From investors willing to lend. These are the bond and note holders.

2. From investors willing to become partners in ownership. These are the stockholders.

Not only do stockholders expect a higher return than bond and note holders, but if the stockholders' earnings are insufficient, the bond investor will take his money to some safer market. Taking into account the ratio which must be prudently maintained between funded debt and stock, a proper figure should be obtained as representing the average annual cost of money. This figure should not be confused with the figure that represents a fair rate of return including margin for surplus and contingencies.

Taxes.—Taxes are levied by various governmental bodies, municipal, county, state and federal, on many different bases. In some specific plant problems, taxes have to be computed to meet the conditions of the case at hand but, in general, it is sufficient to employ a percentage charge for taxes based upon the average experience.

Insurance.—In the case of buildings, and equipment contained in buildings, an annual cost item to cover insurance should be included.

Depreciation.—Depreciation may be defined as the using up of property in service from all causes. These causes include:

(a) Wear and tear, not covered by current repairs.
(b) Obsolescence.
(c) Inadequacy.
(d) Public Requirements.
(e) Extraordinary Casualties.

All telephone property, except land, is subject to deterioration, and the continued consumption of the investment

is a part of the cost of the service which must be provided for by charges against earnings. Only a small portion of the plant actually wears out in service. Instances of this are the rotting of poles and the rusting of iron wire, a relatively small amount of which is used in the plant.

On the other hand, it has been the history of the telephone business that enormous amounts of plant have been taken out of service through no defect in their physical condition but either because they had become obsolete through the development of some more economical or efficient type of equipment, or because they had become inadequate to serve the growing needs of the business.

[fol. 3608] An example of obsolesence is the replacement of antiquated methods of distribution by more modern types. Examples of inadequacy are the replacement of open wires by cable, and the replacement of small cables by larger ones. Examples of public requirement are the abandonment of pole lines and their replacement by underground construction due to road improvements, and the rebuilding of sections of underground conduit due to changes in the grade of streets or to the construction of transit subways. Examples of extraordinary casualties are fires, sleet storms and tornadoes.

The annual charge for depreciation is an amount which, if entered in operating expenses each year during the service life of a unit of plant, would, at the end of that service life, yield a sum equal to the total depreciation of that unit; that is, its first cost in place less the net salvage obtained at its removal. The consumption of capital is a necessary part of the cost of furnishing service and must be provided for by charges against earnings during the life of the property. In arriving at this depreciation charge the best thing we can do is to take our experience of years and look over the whole situation and apply our judgment to it. The value of this judgment depends on the experience, knowledge, ability and integrity of the people who exercise it.

The amount of this charge should be determined for each broad class of plant and it depends upon the average service life and the net salvage value. Net salvage value is gross salvage value minus cost of removal, and takes into consideration both value for reuse and junk value. For instance, the net salvage value of station apparatus is relatively high because a large part of the equipment can be

reused in another location. In other cases, such as iron wire, the net salvage value may be a minus quantity, as there is little or nothing to offset the cost of removal.

Current Maintenance.—Current maintenance charges comprise the cost of repairs, rearrangements and changes necessary to keep the plant in an efficient operating condition during its service life. In cost studies, current maintenance charges should be derived from experience and expressed, generally, on a unit of plant basis, as, for example, per pole, per mile of wire, per foot of cable, or per station, according to the kind of plant being considered. Generally speaking, they bear no direct relation to first cost of plant as other annual charges do.

For this reason, when comparing the annual costs of two or more plant units of different sizes or types, an in- [fol. 3609] correct result would be obtained if maintenance charges were expressed as a percentage of the first cost.

However, for comparative cost studies of average plant, maintained under average conditions, it is sometimes within the precision of the study to employ figures expressed as a percentage of the first cost, provided the figures were derived from the cost of maintaining average plant where average conditions were known to obtain.

Administration.—In certain cost studies, a small allowance is usually made to cover that portion of the salaries and expenses of the general officials of the Company which is fairly chargeable to the administration of the plant.

Operating Costs.—In certain classes of engineering cost studies, comparisons may involve the situation where one type of plant costs initially more than an alternative type, but permits savings to be made in the daily operating labor which may or may not offset the additional first cost. In such cases, to obtain a true comparison, the operating labor costs under each plan must be combined with the total annual charges which are applied to the first costs of the respective plant quantities.

Present Worths

Engineering cost studies frequently involve a balance between plant installed at the present time and plant installed at some future time. An example of this would be the

comparison of a pole whose life was to be extended by attaching it to a stub after (say) 15 years, with a stouter and more expensive pole installed at present or with a pole to which preservative treatment was applied prior to its installation.

In such cases it is not sufficient to compare annual costs which are to be incurred at different times without reducing them to a basis upon which they can properly be compared. If a given amount is required to be expended at some future time, it obviously requires a smaller sum at present in hand to meet this obligation if the fixed time is far distant than if it is in the immediate future.

Let us picture ourselves at the end of the year 1924. If an annual charge of $1,000 is to be paid each year for the 5 years beginning January 1, 1925 and ending December 31, 1929, there will be required, to provide for these five $1,000 payments, the sum of $4,100, in hand, assuming that interest is compounded annually at 7 per cent. On the other hand, if these five annual payments of $1,000 each instead [fol. 3610] of beginning in 1925 were to begin ten years later, that is, if they were to run from January 1, 1935 to the end of 1939, we should require, in hand, $2,084, that is, only about half as much.

To compare, upon a fair basis, expenditures that have to be made at different times, it is customary, as has been done in the preceding example, to reduce these different expenditures to their "Present Worths," or the equivalent in equated or accumulated annual charges.

Summary

From all that has been said, it becomes evident that, whenever a specific addition is made to a growing plant, we are, to a greater or less extent, committing ourselves to a definite programme for relieving, reinforcing or replacing it at some future time in order most economically to provide for the requirements of growth.

The underlying thought, which can not be overemphasized, is so to plan the plant that, as far as practicable, it will serve for its full life, and require no wholesale changes involving the abandonment of substantial portions of the installation. While the design should be based upon the best estimates of future growth that are obtainable, it must

be recognized that the most carefully designed plant layouts employing the best possible estimates of growth, may not always meet the ultimate requirements of flexibility. The chances of a comprehensive plan not fitting in with future development can, however, be reduced to a minimum by thoughtful initial planning.

Generally speaking, our distributing plant layout, once it is established, can not readily nor economically be materially changed. Consequently, if it is not sufficiently flexible in the fundamentals of its design to meet reasonable future possibilities, it may affect adversely the carrying out of proper and economical relief measures, or may require abnormally early reconstruction or replacement. It is very desirable, therefore, always to keep in mind, in any plant layout work, the progressive relief steps which are likely to be required to meet the changing conditions affecting the service requirements. Whenever plant is moved, or taken out of service, property loss is realized. Certain expenditures for these purposes represent the most economical way of conducting the business. But it is of the utmost importance that they should always be incurred along the line of maximum economy, which means that behind every [fol. 3611] plant addition must be engineering cost studies to assist in furnishing the answers to the three questions:

Why do it at all?
Why do it now?
Why do it this way?

But it must always be borne in mind that these studies do not and can not, in themselves, constitute the sole criterion for determining what should be done. They are, at the best, only an aid, guide and check to be utilized, within their limitations, in arriving at conclusions that must, in the last analysis, rest upon seasoned judgment and experience.

Nevertheless, so great do we find the importance of these engineering cost studies in our work, and so great must be their importance in the engineering of any other kind of growing plant, that the question might be raised whether, in courses of engineering instruction, a few hours at least could not advantageously be devoted to acquainting the student with the nature and importance of these economic problems.

[fol. 3612] EXTRACTS FROM EXHIBIT — DEPOSITION EXHIBIT No. 40

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1920

The license contract is as old as the Bell System. The original contract has been continuously in force with only such modifications as have been necessary from time to time to adjust it to the development of the business.

According to the terms of this contract, the American Telephone and Telegraph Company provides for each of the licensee associated companies:

1. Telephone transmitters and receivers, with induction coils, including a surplus supply to cover current demands;

2. Rights under all patents owned or controlled by the American Telephone and Telegraph Company covering the use of telephonic devices, apparatus, methods and systems;

3. The right to use all standardized new and improved apparatus and methods developed through research and experimental work;

4. A guarantee of freedom from royalties, damages and expenses, on account of patents, arising out of recommended uses of apparatus, methods and systems;

5. An organization to prosecute continuously the fundamental work of research and investigation to the end that safety, economy and efficiency in the business may be promoted;

6. Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting, patent, legal, administrative and other matters involved in the efficient, economical and successful conduct of the business;

7. Advice and assistance in the financing necessary in order to develop and enlarge its plant;

[fol. 3613] 8. Assistance, cooperation and support in promoting the health and welfare of employees, including the Plan for Employees' Pensions, Disability Benefits and Death Benefits, with a provision for guaranteeing the in-

tegrity of the funds provided by the associated companies for this purpose;

9. The right to extend to its connecting companies, for the general betterment of the service, the benefits of such engineering and other technical advice and information as the licensee may have received from the American Telephone and Telegraph Company.

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The important consideration is that this license contract is the backbone of the System. It establishes the relationships which have made a nation-wide service not only possible but a thing accomplished and well accomplished. It is what has given to the United States the cheapest, best and most widely utilized telephone service in the world. It is what has made the standards of the Bell System in instruments, apparatus and methods standard the world over.

It furnishes the only way in which this can be accomplished under existing state laws.

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Return on Investment

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In fixing the amount of return for rate-making purposes, the amount of capitalization or the rate of dividend to be paid upon it cannot properly or justly be taken as a basis; because that would penalize the company with conservative capitalization—which is for the benefit of the public because some portion of the surplus always works for the public without capital costs—and would put a premium upon stock-watering where the reverse is the case. The [fol. 3614] value of the property is the only legal basis as well as the only fair basis upon which to figure a return.

Rates for service to be fair must produce a fair return upon the value of the property.

A most important factor in fixing what may be a fair return is the market value of money at the time. Under present conditions a fair return would be not less than 8% or 10%. The assets of the associated companies so far exceed their capital that 8% on their investment as a whole, would produce enough to pay 10% dividends with a fair

margin. No one of the associated companies pays more than 8% dividends.

It is clear therefore that this Company is entitled to considerably higher earnings without being subject to the criticism of earning more than a fair return.

Legal

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The activities of the Department of Development and Research are constantly enlarging the responsibilities of the patent division of the Legal Department. During the past year, the patent holdings of the Bell System have been increased by rights under more than a thousand patents and applications for patents, an increase of approximately twenty per cent. It now owns or controls, or is licensed under, more than six thousand letters patent of the United States and applications therefor. The larger proportion of this increase is represented by inventions made by our own engineers. Rights acquired during the year under other inventions have been acquired largely in exchange for rights granted under our own inventions.

[fol. 3615] A patent suit, based upon a claim against this Company for royalties, has been decided in favor of the Company. An appeal from this decision is pending.

In the course of these developments, numerous interferences in the Patent Office arose, and many others were to be expected. In such case the relative patent rights of each company were involved in so much doubt that neither company was free to proceed in the proper development of its own special field with the certainty that it would not infringe upon the rights of the other.

The experience of the great war so emphasized the vital military importance of world-wide electrical communications that the Navy authorities urged upon the General Electric Company and upon this Company that some arrangement be adopted, by an exchange of licenses or otherwise, whereby this difficulty with respect to patent rights might be remedied, thereby making it possible for the Army and the Navy and the public to obtain the benefit of numerous new radio improvements of extraordinary importance which could not be obtained from apparatus built under the patents of either company alone. * * * That cor-

poration at the present time has a number of high-power radio telegraph stations engaged in long-distance radio telegraphy between the United States and foreign countries, and is erecting or providing for the erection of new and most powerful stations for this service in this and in foreign countries, with the end in view of providing to the American public adequate international and world-wide radio telegraph service. It is believed that by our participation in the Radio Corporation, and by the exchange of licenses above referred to, progress in improving the present unsatisfactory position of the United States in international communications will be greatly accelerated.

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[fol. 3616] At the close of the year, upwards of 2,500 research and development projects were in hand, all these calculated to improve the service which the associated companies are rendering to the public or to make it more economical.

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Not only has attention been given to fundamental improvements in transmission and in apparatus and materials, but minute care and study have been devoted to improvements in the thousands of diversified parts which are required for the most effective and economical operation of the Bell System. In the magnituude of its operations, the number of its personnel, and in the size and equipment of its laboratories, this research and development organization far exceeds that maintained by the telephone and telegraph administration of any government or by any other corporation engaged in similar or related work.

During the year, the department has actively continued its work in developing the radio art. Two experimental radio telephone transmitting and receiving stations have been erected on the Atlantic coast, one near Asbury Park in New Jersey, and the other near Plymouth in Massachusetts. By means of these stations, radio telephone communication has been maintained with two ships experimentally equipped, plying from Boston to southern ports on the Atlantic coast.

Radio telephone communication has been established from Santa Catalina Island, about thirty miles out in the

Pacific Ocean, to the mainland near Los Angeles, and at that point making junction with the local and long-distance wires of the Bell System throughout the United States.

During the International Communications Conference held in December, a demonstration was given at New York [fol. 3617] for the benefit of the members of the conference, at which time the steamship Gloucester on the Atlantic Coast communicated by radio telephone through the New Jersey station, and thence by wire across the North American continent to San Francisco and to Los Angeles, and thence by radio telephone to Santa Catalina Island, in the Pacific Ocean. This demonstration was successful, and the conversation between the ship in the Atlantic and the island in the Pacific was clearly heard at New York by members of the conference.

This achievement well exemplifies the special field of radio telephony, which is particularly adapted to use between ship and shore; between ship and ship; between airplanes in flight; between airplanes and ships; and from airplanes to the ground. For such purposes, wires cannot be used. In the case of Catalina Island, a cable would carry the traffic from the island to the shore more economically and satisfactorily, but owing to conditions growing out of the war, it was impossible to have the cable manufactured as soon as required, so that the radio telephone was installed.

For all such uses, when so-called static disturbances are absent, and when other and interfering stations are not operating, good transmission by the radio telephone can be obtained; but for the above mentioned reasons, and for other causes, radio telephone service is not so dependable and economical as that supplied by wires.

P. 24:

Furthermore, it should be noted that the facilities of the ether for the simultaneous sending of numerous telephone messages are so limited that the ether itself can carry but a small part of the enormous volume of the telephone traffic required by the entire world. The right of way, therefore, must be given to ships, to aircraft, to radio compass sta- [fol. 3618] tions, and to all other radio stations so situated that wires cannot be employed.

In order to reduce the interference in the ether and to provide the maximum opportunity for communication for

mobile and other stations which cannot use wires, the International Communications Conference has proposed a regulation to limit the use of international radio telephony to cases where telephonic communication by any other means is impossible. While this proposed regulation rests on a sound basis and represents the consensus of opinion of the best radio experts in the world, it is, nevertheless, expected as time goes on that a large use of radio telephony will develop in its own special fields. It will play an important part in establishing telephone communication with otherwise inaccessible places and will make it possible for aircraft in flight and ships at sea to connect with the wires of the Bell System and thus hold conversation with any of its subscribers wherever located throughout the United States. The activities of a section of our development staff, therefore, are being devoted exclusively to wireless telephony.

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P. 25:

With this in mind, representations were made to the International Communications Conference asking for the allocation of suitable wave lengths for transoceanic telephony. Owing to the limited number of wave lengths available for this purpose, and owing to the fact that the radio telephone requires from six to ten times as many wave lengths as are required for telegraphy, the desired number of wave lengths could not be obtained. It is hoped, nevertheless, that, without encroaching unduly upon the limited facilities available for telegraphy, the necessary wave lengths for experimental purposes may be allotted.

[fol. 3619] For issuing storm warnings to mariners at sea, for broadcasting weather reports and frost warnings to agriculturalists, and for other similar purposes where it is desired to send information broadcast to be picked up simultaneously by any number of receiving stations, the radio telephone has special fields of future usefulness. For these purposes, and for the purpose of sending out calls for help from a ship or aircraft in distress, the fact that the telephone conversation or message can be heard by all who have proper receiving stations, is a decided advantage.

On the contrary, however, when the telephone message is intended to be received by only one station, this lack of privacy is a defect, and in the case of radio telegraphy used

for press dispatches where it is not intended that the news should be sent broadcast, but rather only to the subscribers of press associations which furnish news exclusively to their subscribers, the advantage of some method of secret communication is a substantial one.

P. 25:

[fol. 3620] In the transmission of news, speed is an essential factor, and while it is not impossible at the present time to encipher news dispatches by ordinary methods so that only subscribers who have the key can understand them, the time required for enciphering and deciphering makes these methods objectionable. Accordingly, the Department of Development and Research has worked on the problem of applying to radio telegraphy the quick cipher or secret method of wire telegraphy which our engineers developed and which was so successfully used upon wires by the Signal Corps during the war. This method has been mentioned in a previous annual report. It is a secret means of telegraph communication, and while the message may be heard at all radio stations, it can be interpreted only by those who have been provided with the cipher key and our automatic cipher apparatus. This instantaneously enciphers the message at the sending end, and deciphers it at the receiving end, where it appears immediately in printed page form in plain language ready for use.

P. 26:

The problem of attaining privacy in radio telephone transmission is peculiar and difficult. Nevertheless, in the solution of this probem we have also made important progress. Our engineers have carried on conversation by radio telephony according to a method which they devised whereby ordinary receiving stations can hear nothing but unintelligible sounds; yet at all stations equipped with the necessary special apparatus and in possession of the requisite operating information, the spoken words can be heard and understood. Our development in this direction is being continued.

[fol. 3621] P. 26:

Great attention has been given to devising new methods for increasing the carrying power of the toll line plant of

the Bell System in respect to the number of telephone and telegraph messages which may be transmitted over one circuit. The multiplex telephone and telegraph system which was developed by our engineers and referred to in the annual report of 1918 has been still further advanced and has been applied on a substantial scale to our plant, with satisfactory results. Our development work in printing-telegraph systems has demonstrated that the printing-telegraph machine has such an important place in the telegraph art that our work upon such apparatus is being continued and has resulted during the year in improvements of great value.

P. 36:

Bell System Income Statement

For Year Ending December 31, 1920

(Duplications Excluded)

Exchange Revenues	$301,282,599	
Toll Revenues	141,883,485	
Miscellaneous Revenues	6,276,031	
Total Operating Revenues		$449,442,115
Depreciation	65,731,071	
Current Maintenance	69,665,080	
Traffic Expenses	145,848,181	
Commercial Expenses	45,075,272	
General and Miscellaneous Expenses	20,500,013	
Total Operating Expenses		346,819,617
Net Operating Revenues		$102,622,498
Uncollectible Revenues	1,208,798	
Taxes	27,841,334	29,050,132
Operating Income		$73,572,366
Non-operating Revenues, Net		11,692,610
Total Gross Income		$85,264,976
Rent and Miscellaneous Deductions	5,755,808	
Interest Deductions	31,724,103	37,479,911
Balance Net Income		$47,785,065
Deduct Dividends		39,999,579
Surplus Earnings		$7,785,486

P. 37:

[fol. 3622] Bell System Balance Sheets, 1919 and 1920

(Duplications Excluded)

Assets:	Dec. 31, 1919	Dec. 31, 1920
Telephone Plant	$1,215,944,184	$1,363,826,327
Supplies, Tools, etc	38,035,034	47,442,043
Receivables	84,409,519	66,351,159
Cash	72,879,842	41,399,285
Stocks and Bonds	118,806,351	115,230,719
Total	$1,530,074,930	$1,634,249,533

Liabilities:		
Capital Stock	512,121,868	511,493,407
Mortgage Bonds	191,163,060	213,571,750
Collateral Trust Bonds	165,369,900	164,396,100
Convertible Bonds and Notes	63,983,700	80,495,900
Debentures	35,686,100	37,330,325
Three and Five Year Gold Notes	90,000,000	90,000,000
Bills Payable	1,774,207	10,130,141
Accounts Payable	72,158,014	73,429,492
Total Outstanding Obligations	$1,132,256,849	$1,180,847,115
Employees' Benefit Fund	9,244,081	9,363,215
Surplus and Reserves	388,574,000	444,039,203
Total	$1,530,074,930	$1,634,249,533

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[fol. 3623] Capital Stock

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The book cost of the assets underlying the capital stock of the American Telephone and Telegraph Company, including its interest in the assets of its associated companies, amounts to more than $200 for each share of stock.

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P. 46:

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year 1920

	1920
Earnings:	
Dividends	$34,800,465.51
Interest	12,969,756.16
Telephone Operating Revenues	56,030,624.92
Miscellaneous Revenues	146,141.49
Total	$103,946,988.08
Expenses	33,260,083.98
Net Earnings	$70,686,904.10
Deduct Interest	18,865,688.44
Balance	$51,821,215.66
Deduct Dividends	35,376,792.88
Balance	$16,444,422.78
Appropriated for Contingencies	8,000,000.00
Balance, added to Surplus	$8,444,422.78

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C. A. Heiss, Comptroller.

P. 47:

[fol. 3624] American Telephone and Telegraph Company

Balance Sheet, December 31, 1919 and 1920

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Liabilities

	Dec. 31, 1919	Dec. 31, 1920
Capital Stock	$441,981,200.00	$442,825,400.00
4% Collateral Trust Bonds, 1929	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds, 1946	77,434,900.00	76,461,100.00
5% Western T. and T. Co. Bonds, 1932	9,985,000.00	9,985,000.00
4% Convertible Bonds, 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, 1933	13,027,500.00	12,198,200.00
6% Convertible Bonds, 1925	48,367,200.00	48,195,700.00
6% 3-Year Gold Notes, 1922	50,000,000.00	50,000,000.00
6% 5-Year Gold Notes, 1924	40,000,000.00	40,000,000.00
Dividend Payable January 15th	8,839,612.00	8,852,072.00
Interest and Taxes Accrued not Due	6,408,390.08	6,773,978.36
Current Accounts Payable:		
Compensation Due Associated Companies from United States Government	7,858,620.83	
Other Current Accounts Payable	6,363,800.72	7,422,682.29
Employees' Benefit Fund	2,000,000.00	2,000,000.00
Reserve for Depreciation and Contingencies	47,262,123.43	57,915,152.06
Surplus (Including Capital Stock premiums and excluding Debt Discount and Expense)	86,663,741.54	96,649,961.44
	$926,781,088.60	$939,868,246.15

C. A. Heiss, Comptroller.

[fol. 3625] Extracts from Exhibit Deposition Exhibit No. 41

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1921

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P. 6.

The security for the Company's debts represented by its bonds and other like obligations is in its earning power and in the property behind these securities. Therefore, new money put into the Company by the shareholders and invested in earning property strengthens its outstanding bonds and other like obligations becaues it increases both the earnings and the property back of them.

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P. 10.

To induce the investment of the sums that are necessary to provide for the growth of the public utilities of the

United States, investors must have a dependable assurance that these investments are as desirable as other investments offered to them after the differences in the circumstances and conditions surrounding the investments have been equated. The laws of demand and supply apply to money seeking investment, just as they apply to everything else, and when differing hazards and other varying conditions are taken into account, they tend to equalize the return upon all investments.

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[fol. 3626] Financial Results

P. 12:

In previous reports to stockholders, the statement has several times been made that an actual appraisal conservatively made of the telephone properties of the Bell System companies would show values greatly in excess of the amount at which these properties are carried on the books. An example of what we believe to be fairly typical of all Bell System property, is an appraisal completed recently by engineers of a Public Utility Commission covering approximately one-half of the property of one of the Associated Companies. In this case the Commission, after taking into consideration the average prices for labor and material during the past ten years, arrive at a reproduction cost of the property 23 per cent in excess of the cost value of the property as carried upon the books of the company. A consideration of unit prices based on average prices for labor and material during the past five years, led to a figure 37 per cent in excess of the book figures, while unit prices based on prices for labor and material during 1919, resulted in a figure 76 per cent in excess of book figures.

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P. 19:

[fol. 3627] Our practical experience with radio communication serves still further to emphasize what has been pointed out in previous reports—that the practical field for radio telephony lies in connection with those situations where it is impracticable to employ wires, as in the case of communications between moving vehicles, from ship to ship, and from ship to shore, from airship to ground, and

similar classes of service. All of these possible fields for the extension of our service are being carefully explored, and it is expected that as time goes on they may be developed into useful auxiliaries to the wire service. Over great bodies of water and between points difficult of access, where wire service is impracticable to establish or maintain, the radio telephone offers a promising means of communication.

P. 20:

Our scientific staff has however continued during the year its extensive work in the field of radio communication. The Bell System has available all the important inventions with reference to commercial wireless telephony and expects to make use of them in every way possible for the extension, betterment, and cheapening of the service as ways of doing so develop. Our engineering and commerical organizations are actively engaged in developing whatever possibilities there are in this field.

A field in which the radio telephone has possibilities is in the furnishing of broadcasting service, a one way service which consists in sending out by radio telephone from a central station, news, music, speeches, and the like, which under favorable atmospheric conditions may be received by all who have receiving stations within the area served, and care to listen. The number of wave lengths available for [fol. 3628] this radio telephone service is limited, but we are preparing to furnish this broadcasting service to such an extent as may meet the commercial demands of the public, subject to that limitation.

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Western Electric Company, Incorporated

P. 28, 29:

* * * Its compensations have been fixed on the basis of reasonable but steady return on investment rather than that of the high but fluctuating profit on the sales of an uncontrolled manufacturer. No public utility has paid less proportionately in profits to the manufacturers of its equipment and such profits as have been paid, through our stock ownership, remain in the Bell System for the advancement of the utility. Volume of sales and profits therefrom, the goal of most manufacturers, were of secondary importance,

while the needs of the service became the predominant factor in working out the solution of the problems which confronted the Bell System. The telephone users have been materially benefited by this arrangement.

Bell System Statistics and Financial Data

P. 35:

The capital stock, bonds and notes payable of the Bell System outstanding in the hands of the public at the close of the year 1921 were $1,301,326,508, a net increase of approximately $193,900,000 over similar obligations outstanding at the end of 1920. The book cost of the net assets devoted to earning a return on these outstanding securities amounts to over $1,807,000,000, while the actual value thereof is considerably in excess of this figure.

[fol. 3629] Extracts from Exhibit Deposition Exhibit No. 42

Annual Report of the Directors to the Stockholders of the A. T. & T. Co. for Year Ending December 31, 1922

P. 12, 13:

Conservative financial and business policies have been followed during the entire history of your Company. Adequate provision has been made for depreciation, and the funds taken from earnings for this purpose have been invested in the business, so that the investment of its stockholders and creditors has at all times been kept unimpaired. In the aggregate more than $40,000,000 in excess of par has been paid into the treasury in cash in respect of stock outstanding. At no time have all of the earnings been paid out in dividends, but during its entire history a portion thereof has annually been retained in the business and invested in property.

P. 18:

The use of cable, whether underground or overhead, though absolutely necessary, has presented most formid-

able scientific problems. When first introduced, less than half a mile of cable in a circuit was enough to seriously interfere with conversation between city and suburbs. By our continued efforts, the range of possible use of cable was gradually increased until by 1920 conversation was possible through 2,000 miles of cable. The work of the past year has developed methods which will make conversation scientifically possible through 3,000 miles of cable equal in all respects to a conversation from one room to another in the same building.

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P. 19:

[fol. 3630] In certain sections of this country, less than a year of radio broadcasting has shown how interference destroys its value even as a source of entertainment, and in connection with international intercommunication, there are all of the difficulties arising from lack of centralized control of the complete medium of communication. It is in the expectation that ultimately by national and international control interference will be obviated, and that by cooperation other problems having international aspects may be at least partially solved, that we are continuing our studies. Experiments in wireless telephony as an additional agency of intercommunication are, therefore, under present conditions, more of scientific than of commercial value.

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P. 20:

As in the past, the greater value of the Development and Research Department is in the continual study of all of the mechanisms and materials going into the plant of the Bell System and the Improvements resulting in greater economies in construction, maintenance and operation, in protection of the plant and in better service. In this report we can only mention an occasional conspicuous scientific contribution which seems to have a large possibility either in extension or improvement of the service.

P. 29:

[fol. 3631] Bell System Income Statement

For Years Ending December 31, 1921, and 1922

(Duplication Excluded)

	1921	1922
Exchange Revenues	$343,133,098	$374,718,580
Toll Revenues	146,459,202	163,097,837
Miscellaneous Revenues	7,495,933	9,012,656
Total Operating Revenues	$497,088,233	$546,829,073
Depreciation	$70,858,073	$80,081,280
Current Maintenance	73,061,099	79,817,856
Traffic Expenses	148,372,962	152,948,539
Commercial Expenses	47,831,650	49,650,397
General and Miscellaneous Expenses	23,563,499	25,853,826
Total Operating Expenses	$363,687,283	$388,351,898
Net Operating Revenues	$133,400,950	$158,477,175
Uncollectible Revenues	$1,843,962	$3,081,821
Taxes	34,512,479	41,215,441
Operating Income	$97,044,509	$114,179,913
Non-operating Revenues—Net	13,651,814	17,209,311
Total Gross Income	$110,696,323	$131,389,224
Rent and Miscellaneous Deductions	$6,497,642	$6,897,106
Interest Deductions	36,773,998	37,869,366
Total Deductions	$43,271,640	$44,766,472
Net Income	$67,424,683	$86,622,752
Deduct Dividends	47,848,394	60,305,204
Balance	$19,576,289	$26,317,548

P. 29, 30:

[fol. 3632] Bell System Earnings and Expenses

The consolidated Bell System income statement from which all intercompany duplications have been eliminated, appears above. This income statement represents the telephone business of the System as a whole, i. e., the business of the American Telephone and Telegraph Company and its Associated Companies, including the Bell Telephone Securities Company, in its relation to the public. It does not include data for connecting, independent, or sublicense companies, or The Bell Telephone Company of Canada, the Western Electric Company, Incorporated, and the 195 or 205 Broadway Corporations, except as interest and dividends from these companies are included in non-operating revenues. (The financial statements of the American Tele-

phone and Telegraph Company are shown on pages 42 and 43.)

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P. 31, 32:

Capital stock, bonds and notes payable of the Bell System outstanding in the hands of the public at the close of the year 1922 amounted to $1,483,466,673, a net increase of approximately $182,140,165 over similar obligations outstanding at the end of 1921. The book cost of the net assets devoted to earning a return on these outstanding securities amounts to over $2,065,700,000, while the actual value therefore is considerably in excess of this figure.

[fol. 3633] Bell System Balance Sheets, 1921 and 1922

(Duplications Excluded)

Assets:	Dec. 31, 1921	Dec. 31, 1922
Telephone Plant	$1,543,865,545	$1,729,219,520
Supplies, Tools, etc.	47,944,435	50,744,200
Stocks and Bonds	126,202,014	146,834,400
Receivables	72,720,690	87,681,728
Temporary Cash Investments	52,136,110	100,539,281
Cash	57,644,707	47,503,842
Total	$1,902,510,501	$2,162,522,971
Liabilities:		
Capital Stock (including Installments)		
Common:		
American Tel. & Tel. Co.	$551,385,213	$715,083,854
Associated Companies	59,174,493	61,535,743
Preferred:		
Associated Companies	21,656,547	60,387,747
Total Capital Stock	$632,216,253	$837,007,344
Funded Debt:		
Mortgage Bonds		
Associated Companies	302,753,415	360,072,390
Collateral Trust Bonds		
American Tel. & Tel. Co.	163,502,500	162,750,500
Convertible Bonds and Notes		
American Tel. & Tel. Co.	47,647,400	23,851,300
Associated Companies	26,738,400	25,180,100
Debentures and Notes		
American Tel. & Tel. Co.	89,500,000	40,000,000
Associated Companies	30,598,875	34,178,875
Total Funded Debt	$666,740,590	$646,033,165
Bills Payable		
Associated Companies	2,369,665	426,164
Total Capital Liabilities	$1,301,326,508	$1,483,466,673
Accounts Payable	39,478,986	38,116,351
Accrued Liabilities Not Due	46,095,881	58,702,050
Employees' Benefit Funds	9,485,910	18,655,184
Surplus and Reserves	506,123,216	563,582,713
Total	$1,902,510,501	$2,162,522,971

P. 42:

[fol. 3634] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1921 and 1922

	1921	1922
Earnings:		
Dividends	$38,580,672.59	$44,972,928.91
Interest	13,803,052.76	12,281,954.46
Telephone Operating Revenues	58,268,539.17	65,324,889.89
Miscellaneous Revenues	90,507.92	227,946.41
Total	$110,742,772.38	$122,807,719.67
Expenses (Including provisions for depreciation and all taxes)	37,218,959.61	41,139,279.67
Net Earnings	$73,523,812.77	$81,668,440.00
Deduct Interest	19,521,109.05	15,498,011.88
Balance	$54,002,703.72	$66,170,428.12
Deduct Dividends	42,674,403.00	52,971,251.93
Balance	$11,328,703.72	$13,199,176.19
Appropriated for Contingencies	3,000,000.00	5,000,000.00
Balance for Surplus	$8,328,300.72	$8,199,176.19

C. A. Heiss, Comptroller.

P. 43:

[fol. 3635] American Telephone and Telegraph Company

Balance Sheet December 31. 1921 and 1922

Liabilities

	December 31, 1921	Dec. 31, 1922
Capital stock:		
Capital Stock	$548,185,300.00	$699,347,400.00
Capital Stock Installments	3,199,913.09	15,736,454.22
Total Capital Stock	$551,385,213.09	$715,083,854.22
Funded Debt:		
4% Collateral Trust Bonds 1929	78,000,000.00	$78,000,000.00
5% Collateral Trust Bonds 1946	75,567,500.00	74,783,500.00
5% Western T. & T. Co. Bonds 1932	9,985,000.00	9,970,000.00
4% Convertible Bonds 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds 1933	11,020,300.00	7,191,800.00
6% Convertible Bonds 1925	34,038,100.00	14,070,500.00
6% 3-Year Gold Notes 1922	49,500,000.00	.....
6% 5-Year Gold Notes 1924	40,000,000.00	40,000,000.00
Total Funded Debt	$300,699,900.00	$226,604,800.00
Total Capital Liabilities	$852,085,113.09	$941,688,654.22
Dividend Payable January 15th	$12,299,206.50	$15,719,753.25
Accounts Payable	5,081,733.33	6,465,453.16
Interest and Taxes Accrued, Not due	6,709,478.17	7,630,585.97
Reserve for Employees' Benefit Fund	2,000,000.00	5,000,000.00
Reserve for Depreciation and Contingencies	63,550,463.13	68,514,833.29
Surplus Appropriated for Dividends payable April 16 and July 16, 1923	.....	31,471,956.00
Surplus Unappropriated (Including Capital Stock Premiums)	108,604,668.74	87,440,606.49
	$1,050,330,662.96	$1,163,931,842.38

C. A. Heiss, Comptroller.

[fol. 3636] EXTRACTS FROM EXHIBIT DEPOSITION. EXHIBIT No. 43

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1923

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P. 3, 6:

Since the beginning of telephone service forty-six years ago, the purpose has been to create and maintain a service available in any part of the country to furnish telephone communication with any other part of the country. The Bell Telephone System embraces all of the agencies through which that is accomplished.

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P. 6:

With the exception of its interest in The Bell Telephone Company of Canada and in the Florida-Cuba telephone cables, and its indirect interest in the sales of the Western Electric Company's foreign subsidiaries, your Company has no direct or indirect financial interests abroad. It has been and is the Company's policy to concentrate its efforts and resources upon the development and perfection of telephone service in this country, including connections with foreign services as improvement in the art may make such connections available; but that policy has not contemplated making them available by investment abroad or by any other programme which would withdraw any of our resources either in men or money from this country. We maintain the most friendly relations with those abroad who are responsible for the operation of telephone services in order that the general progress of the art of telephony may be promoted.

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P. 10, 11:

Since the end of 1920, the relation between funded debt and capital stock of your Company which has always been maintained on a sound basis has been materially strengthened. [fol. 3637] On December 31, 1920, the funded debt aggregated $317,429,000, or 42 per cent of the total capital obligations, while capital stock aggregated $442,825,400. With the issuance of the debentures of November 1, 1923,

and giving effect to the retirement of $40,000,000 six per cent notes, due February 1, 1924, the funded debt will aggregate approximately $279,000,000, or less than 28 per cent of total capital obligations, with capital stock (including installments) outstanding in the amount of about $753,500,000. As compared with capital obligations outstanding on December 31, 1920, funded debt will have decreased $38,000,000, whereas capital stock has increased $311,000,000.

The net assets of the Company conservatively stated as of December 31, 1923—after deducting current liabilities—were $1,274,239,000, and these exceeded by $211,000,000 the total capital obligations—stock and debt—outstanding.

* * * * * * *

P. 19, 20:

In order that we might keep in intimate touch with the practical development of radio broadcasting and furnish advice to our Associated Companies with respect thereto, we have been operating a broadcasting station in New York City since November, 1922. In connection with the operation of this station, we have offered the use of its facilities on a toll basis to those who desire to broadcast, subject to reasonable rules and regulations. While the operation of this station is still on an experimental basis, experience to date indicates that there is a demand, on the part of those who desire to broadcast, for a service of this character on a high plane.

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P. 21, 22:

Experiments have been continued on transatlantic radio telephony, following the successful tests which were noted in the last report. Since that time, with even better results [fol. 3638] speech has been transmitted to England during test periods at weekly intervals throughout the year. Measurements indicate that, under most favorable conditions, a small amount of power such as is used in an amateur set will transmit speech so as to be heard sporadically in England. Atmospheric conditions, however, often change so greatly within only a few hours that ten thousand times as much power would not give audible speech. Engineers are actively engaged on the difficult problems presented by this extreme variability of radio telephone transmission

over such distances. Much more scientific investigation and development work must yet be done before definite statements can be made concerning the prospects of dependable, day-by-day transoceanic telephone service.

In a previous report it was stated that our engineers had devised a method whereby privacy in radio transmission could be obtained. This method was applied to the radio system in operation between Catalina Island and the mainland, and operated satisfactorily in commercial service.

In the general field of radio, work has been actively prosecuted during the year, with a view to the development of this branch of the art for use in those situations in which, with due regard to its possibilities and to its limitations, radio transmission may be employed.

The programme of extending toll cable to the west has been continued and the cable at the end of the year is completed from the principal points on the Atlantic seaboard to Cleveland, and will be extended to Chicago within the next two years.

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P. 30:

Bell System Earnings and Expenses

The income statement on the opposite page, from which all intercompany duplications have been excluded, represents the business of the Bell System as a whole in its relation to the public. It consolidates the accounts of the [fol. 3639] American Telephone and Telegraph Company and the 25 Associated Companies, but does not include data for connecting companies or for such companies as The Bell Telephone Company of Canada and the Western Electric Company, except as interest and dividends from these companies are included in non-operating revenues.

[fol. 3640] Extracts from Exhibit Deposition Exhibit No. 44

Annual Report of the Directors of the American Telephone & Telegraph Company for the Year Ending December 31, 1924

P. 5:

The delay usually attendant upon the consideration of a proceeding for an increase in telephone rates occasionally

creates a period in the history of an Associated Company during which its earnings do not adequately meet its full dividend requirements. During such period, the companies usually continue their dividends at their regular rates in the expectation that their earnings will soon return to a normal basis and that ultimately the sums taken from surplus to make up these dividends will be restored. Such an expectation is reasonable. The capitalization of our Associated Companies is so conservative that a fair return upon the value of their property always affords earnings in excess of dividend requirements. This fact also justifies our confidence that the few cases where rate adjustments are now pending will be satisfactorily concluded in due course.

During 1924 there were four of our Associated Companies which paid dividends in part out of accumulated surplus. Other Associated Companies did not distribute in dividends their entire earnings, so that as a whole our Associated Companies more than earned their dividends in 1924, and made additions to surplus.

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P. 11:

* * * It is impossible at present to predict the date of telephone conversation with Great Britain or even to predict, on the basis of present conditions, that it will be a practical and commercial possibility, taking into consideration other difficulties as well as technical difficulties. Any [fol. 3641] other applications of wireless telephony to telephone service, except in minor instances where wire connection is impossible, appear even more remote.

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P. 16, 17:

An exact knowledge of the nature and characteristics of human speech is of fundamental importance in telephone engineering. For a number of years past we have been carrying on a more comprehensive and precise investigation of speech than has ever before been attempted. The results of this work have already been of the greatest importance in the economic design of our telephone apparatus and circuits, as well as in the solution of the special problems of telephone quality which arise in radio broadcasting and in the use of telephone wires in connection there-

with. As an incident of this development interesting from a humanitarian standpoint has been the cooperative work by our scientists and members of the medical profession, which has made available apparatus of great value in the study and amelioration of defects in human hearing and speech and for other medical purposes which involve sound in the diagnosis or treatment of disease.

An efficient method has been developed for electrically transmitting photographs, drawings, hand-writing, finger prints, etc., over telephone circuits. The first public demonstration of this method was made on May 19, 1924, when pictures were transmitted from Cleveland to New York City in the presence of representatives of newspapers, press associations and others. During the National Republican Convention pictures of interest in connection therewith were taken and transmitted from Cleveland to New York, and during the National Democratic Convention similar pictures were taken and transmitted from New York to Chicago. These pictures were widely published in news- [fol. 3642] papers and magazines. Since the demonstrations just referred to the process has been much improved. The received pictures now differ very little from ordinary photographic prints and are therefore well adapted to newspaper reproduction and for other purposes.

While it is still too early to forecast accurately the commercial future of this picture transmission development it seems probable that it may result in a considerable service which will utilize our circuits at times when they are not required for regular telephone service.

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P. 18:

Further developments in the use of our wire lines for connecting radio stations have permitted practically nationwide broadcasting of important public events. As many as twenty-seven separate broadcasting stations, stretching from the Atlantic seaboard to the Pacific, have been connected together for the broadcasting of speeches of national interest.

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P. 19:

The methods of handling our research and development activities have changed from time to time in the past and

have evolved as the magnitude and scope of this work have grown. For some time it has been apparent that a further change would shortly be required in order adequately to meet the problems likely to confront the Bell System in the future.

P. 27a:

[fol. 3643]

Bell System Income Statement

For the Years Ending December 31, 1923 and 1924

(Inter-Company Duplications Excluded)

	1923	1924
Exchange Revenues	$412,009,426	$454,326,217
Toll Revenues	178,427,051	190,317,904
Miscellaneous Revenues	11,153,311	12,944,728
Total Operating Revenues	$601,589,788	$657,588,849
Depreciation	87,484,693	99,693,110
Current Maintenance	91,154,988	101,596,928
Traffic Expenses	170,993,441	177,898,385
Commercial Expenses	53,406,861	58,852,751
General and Miscellaneous Expenses	26,036,076	28,573,101
Total Operating Expenses	$429,076,059	$466,614,275
Net Operating Revenues	$172,513,729	$190,974,574
Uncollectible Revenues	3,436,422	4,129,904
Taxes	45,648,727	50,497,688
Operating Income	$123,428,580	$136,346,982
Non-Operating Revenues—Net	21,526,309	20,313,964
Total Gross Income	$144,954,889	$156,660,946
Rent and Miscellaneous Deductions	7,578,970	7,884,327
Interest and Deductions	37,751,447	41,531,071
Total Deductions	$45,330,417	$49,415,398
Net Income	99,624,472	$107,245,548
Deduct Dividends	72,428,617	82,602,906
Balance	$27,195,855	$24,642,642

P. 28:

[fol. 3644] After meeting all expenses and paying a return on the capital used in the business, there remain earnings of $24,642,642. Provisions have been made by appropriations of Surplus to cover the contingency of possible refunds of charges for service in the event of adverse decisions in rate investigations now pending before commissions or courts. The surplus earnings, together with funds

made available through charges to expenses for depreciation, have been invested in the telephone business and thus have reduced the amount of new capital which it would otherwise have been necessary to obtain from the public.

P. 29:

[fol. 3645] Bell System Balance Sheets, 1923 and 1924

(Inter-Company Duplications Excluded)

Assets:	Dec. 31, 1923	Dec. 31, 1924
Telephone Plant	$1,978,947,543	$2,266,923,466
Supplies, Tools, etc	59,761,345	63,448,453
Stocks and Bonds	150,059,850	155,710,162
Receivables	87,000,576	86,092,322
Temporary Cash Investments	[illegible],961,698	46,911,404
Cash	[illegible],317,313	45,108,738
Total	$2,400,048,325	$2,664,194,546
Liabilities:		
Capital Stock (Including Installments)		
Common		
American Tel. & Tel. Co	753,501,507	917,344,372
Associated Companies	63,094,513	72,195,543
Preferred		
Associated Companies	74,938,547	104,032,947
Total Capital Stock	$891,534,567	$1,093,572,862
Funded Debt:		
Mortgage Bonds		
Associated Companies	442,514,459	480,534,197
Collateral Trust Bonds		
American Tel. & Tel. Co	161,925,500	161,134,000
Associated Companies		414,400
Convertible Bonds and Notes		
American Tel. & Tel. Co	17,407,600	11,424,400
Associated Companies	222,000	81,000
Debentures and Notes		
American Tel. & Tel. Co	130,443,400	98,998,600
Associated Companies	147,575	146,000
Total Funded Debt	$752,660,534	752,732,597
Bills Payable:		
Associated Companies	248,294	365,318
Total Capital Liabilities	$1,644,443,395	$1,846,670,777
Accounts Payable	50,890,971	48,708,560
Accrued Liabilities Not Due	62,307,904	65,604,527
Employees' Benefit Funds	20,552,875	24,313,090
Surplus and Reserves	621,853,180	678,837,592
Total	$2,400,048,325	$2,664,194,546

P. 40:

[fol. 3646] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1923 and 1924

Earnings:	1923	1924
Dividends	$54,078,663.11	$63,559,326.46
Interest	12,998,157.47	14,570,870.66
Telephone Operating Revenues	71,840,735.27	75,513,105.51
Miscellaneous Revenues	373,405.65	439,533.40
Total	$139,290,961.50	$154,082,836.03
Expenses (Including provision for depreciation and all taxes)	43,901,043.47	46,463,473.21

	1923	1924
Net Earnings	95,389,918.03	107,619,362.82
Deduct Interest	13,697,736.66	16,573,041.41
Net Income	$81,692,181.37	$91,046,321.41
Deduct Dividends	63,274,388.10	70,918,227.27
Balance	$18,417,793.27	$20,128,094.14
Carried to Reserve for Contingencies	3,000,000.00	3,000,000.00
Carried to Surplus	15,417,793.27	17,128,094.14
Total	$18,417,793.27	$20,128,094.14

C. A. Heiss, Comptroller.

P. 41:

[fol. 3647] American Telephone and Telegraph Company

Balance Sheet, December 31, 1923 and 1924

Assets

	December 31, 1923	December 31, 1924
Stocks of Associated Companies	$756,463,932.11	$896,499,180.98
Bonds and Notes of, and Net Advances to, Associated Companies	178,147,274.02	211,837,870.94
Stocks, Bonds and Notes of, and Advances to Other Companies	102,211,723.47	95,334,922.09
Long Lines Plant and Equipment	125,671,228.42	140,557,941.86
Telephones	33,275,285.85	37,122,591.66
Real Estate	12,096,745.41	12,124,494.88
Office Furniture and Fixtures	956,088.11	1,094,478.14
Accounts Receivable	10,443,626.03	13,295,581.25
Temporary Cash Investments	62,218,588.55	46,748,297.25
Cash	25,217,740.10	23,531,892.27
	$1,306,702,232.07	$1,478,147,221.32

Liabilities

Capital Stock:		
Capital Stock	$735,519,200.00	$888,478,100.00
Capital Stock Installments	17,982,306.96	28,866,271.70
Total Capital Stock	753,501,506.96	917,344,371.70
Funded Debt:		
4% Collateral Trust Bonds, '29	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds '46	73,979,500.00	73,205,000.00
5% Western T. & T. Co. Bonds '32	9,970,000.00	9,969,000.00
5½% Debenture Bonds, 1943	100,000,000.00	99,023,600.00
4% Convertible Bonds, 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, '33	5,200,700.00	3,543,400.00
6% Convertible Bonds, 1925	9,617,900.00	5,292,000.00
6% 5-year Gold Notes, 1924	30,468,400.00	.....
Total Funded Debt	$309,825,500.00	$271,622,000.00
Total Capital Liabilities	1,063,327,006.96	$1,188,966,371.70
Dividend Payable January 15th	16,539,124.50	19,988,734.50
Accounts Payable	7,754,816.30	24,307,660.13
Interest and Taxes Accrued Not due	8,168,929.43	8,664,664.62
Reserve for Employees' Benefit Fund	6,000,000.00	7,000,000.00
Reserve for Depreciation and Contingencies	75,985,328.99	81,975,454.92
Surplus Appropriated for Dividend payable April 15, 1925	.....	19,990,757.25
Surplus (Including Capital Stock Premiums	128,927,025.89	127,253,578.20
	$1,306,702,232.07	$1,478,147,221.32

C. A. Heiss, Comptroller

[fol. 3648] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #45

Annual Report of the American Telephone and Telegraph Company for the Year 1925

The gross revenue of the Bell System was $761,200,000. Net earnings were 6½ per cent on the amount invested in plant and other assets. Earnings available for contingencies and surplus amounted to 1⅓ per cent on the investment—less than a cent a day a telephone, a necessary but relatively small margin of safety.

* * * * * * *

The par value, including installments, of the stock of the Bell System outstanding in the hands of the public at the end of the year was $1,144,618,690, of which $949,170,350 was American Telephone and Telegraph Company's stock—the balance being common and preferred stocks of Associated Companies held by the public. The entire debt of the Bell System was $891,008,995, less than one-third of the total assets. Of the debt only $502,219,065 is represented by mortgage bonds. The financial structure of the Bell System is, therefore, sound—an important factor in enabling it to obtain funds, needed from time to time for extensions to its plant, on a satisfactory basis.

* * * * * * *

Telephone Service

The population of the country grows at the rate of from one to two per cent a year. It has been estimated that general business increases somewhat faster than population—approximately three or four per cent a year. The telephone business—due to higher standards of living and the constant trend toward economy of time, not only in [fol. 3649] business but in all activities—increases at an even more rapid rate than general business.

Because of the nature of the telephone business, its continued growth makes it increasingly difficult even to maintain present standards of service. At the same time, conditions of modern business and domestic life constantly demand ever better and faster service.

Telephone service is not a commodity or physical product comparable to that furnished by other industries, or even other utilities. The business of a telephone company is, in many respects, unique. It furnishes and makes available a service—a service which requires the interconnection of the users. There must be two parties to every telephone conversation. Furthermore, a telephone company can make its service satisfactory only with the cooperation of the users.

The problem of furnishing the service increases with the number of telephones which can be connected, and it is obvious, when one considers the nature of the business, that many factors entering into the cost of furnishing the service would increase greatly if it were not for new economies.

The task, for instance, of interconnecting, or being ready at all times to interconnect, any two of ten telephone subscribers, is relatively simple. The plant needed, however, and the complexity of operation required, to be able to connect any one of ten thousand subscribers with any other one, are relatively very much greater. Thus, in metropolitan centers, due to the large growth, there are increasing complications in furnishing telephone service. To the prospective subscriber it would, perhaps, appear that all that is necessary is to put a telephone instrument in his home or office. What is actually necessary is, not only to [fol. 3650] install the instrument in his home or office, but to provide also the complicated plant which will make it possible for his telephone to be connected with any one of hundreds of thousands of other telephones, as well as for any one of those hundreds of thousands of telephones to be connected with his telephone.

Each new telephone, therefore, means increased investment in plant, which is only in part represented by either the telephone instrument or the line running to the particular central office to which it is connected. Not only does this tend to a more than proportionate increase in the plant, but it also means increased complexity of operation. Telephone costs have been kept at the present relatively low point, in spite of this unique character of the business, only by constant development and invention of new types of apparatus, and new and better methods of operation.

During the past year the cable between New York and Chicago was completed, and further extensions of toll cable plant are under way.

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From our research and development have come such noteworthy achievements as transcontinental telephony, the extension of telephone service to great distances in storm-[fol. 3651] proof cable, the multitude of intricate mechanisms which have made possible the rapid interconnection of millions of telephones, and the scientific work which has resulted in the beginnings of transoceanic radio telephony.

While these and other noteworthy accomplishments have made possible the tremendous expansion of telephony, they are but a fraction of the total research and development results which your Company is continuously contributing toward a better, a greater, and a more economical telephone service. Each great scientific advance that has been made in the development of telephony has marked out new possibilities for improvement in the service. To render serviceable the results of these scientific advances requires a great many detailed studies that ramify into all parts of the telephone service. In consequence, a very large part of the activities of research and development is devoted to the improvement and simplification of innumerable technical details, all of which must be worked out if the service is to be improved. At the present time there are more than a thousand of these detail research and development problems in process of solution. Since the introduction of improperly developed means and methods would be disastrous in a service so intricate as that of the Bell System, each of these developments requires painstaking care.

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Further work with a view to better adapting the regular telephone plant to extended use in connection with radio broadcasting stations has been carried on. Every other phase of radio transmission which might have application in the extension of the telephone facilities has also been actively considered.

[fol. 3652] Results of Economies

The results of the Bell System's continued efforts for improvement and more economical methods, are apparent

in the cost of telephone service to the public. Compared with ten years ago, telephone rates are, on the average, only 33 per cent higher. This is in spite of the fact that wages and material costs have advanced much more than 33 per cent—in fact, wages have advanced much more than the cost of living which is estimated to have increased 75 per cent. This means that if wages and material costs had not changed from pre-war levels, it would have been possible to make an actual reduction in telephone rates of 20 per cent without reducing the present rate of net earnings. The Bell System companies do not need, nor do they seek to earn, more than a reasonable return on their properties—in 1925 the Bell System as a whole earned 6½ per cent on investment in plant and other assets, and substantially less on the real value of its property. It always has been, and still is the policy of the companies comprising the Bell System, after earning a reasonable return, to have all possible reductions in costs benefit the telephone subscriber. Obviously, the change in the value of the dollar; the increasing size of the business, requiring increased plant at present-day prices; the replacement of used-up plant, which was built originally at lower prices, by plant built at present-day prices; higher taxes; and the present wage level, have made rate adjustments upward necessary, but to an extent much less than the increase in prices generally. These rate adjustments have been largely completed.

[fol. 3653] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1925

Earnings:	
Dividends	$75,395,527.38
Dividends on stocks owned.	
Interest	17,967,081.76
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	
Telephone Operating Revenues	86,534,623.51
Revenues under contracts for furnishing instruments and services, and revenues from the operation of the long-distance lines.	
Miscellaneous Revenues	561,680.05
Total	$180,458,912.70
Expenses	51,422,579.05
Salaries and expenses incurred in conducting the business, including expenses of operating the long-distance lines; provision for depreciation; rents, taxes and miscellaneous expense items.	

Net Earnings	$129,036,333.65
Deduct Interest	21,631,287.50
Interest on bonds, debentures and other indebtedness.	
Net Income	$107,405,046.15
Deduct Dividends	81,044,425.93
Dividends at the rate of $9.00 per share per annum on capital stock.	
Balance	$26,360,620.22
Carried to Reserve for Contingencies	$6,000,000.00
Carried to Surplus	$20,360,620.22
Average number of shares of capital stock outstanding during year	9,111,814
Net earnings per share available for dividends, 1925 (after interest charges)	$11.79

C. H. HEISS, Comptroller

[fols. 3654 & 3655] Bell System Financial Statements

The Bell System Balance Sheet and Income Statement which follow consolidate the accounts of the American Telephone and Telegraph Company and its twenty-five associated operating telephone companies, all inter-company duplications being excluded from the combined figures. The accounts of the Western Electric Company, Incorporated, The Bell Telephone Company of Canada and of subsidiary and connecting companies in which either the American Telephone and Telegraph Company or its associated telephone companies have investments are not consolidated. The investments in these companies are included in the accompanying Balance Sheet under the item Investments, and dividends and interest received from them are included in the Income Statement under Non-Operating Revenues.

Bell System Balance Sheet, December 31, 1925

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,524,905,590
Plant and equipment used in furnishing telephone service; comprised of land and buildings, rights of way, poles, wire, cable, underground conduit, switchboards, telephones, etc. Increase during year $257,982,124	
General Equipment, Tools and Supplies	69,334,607
Materials and supplies, office furniture and fixtures, automobiles, tools, etc. Increase during year $5,886,154.	
Investments	163,728,250

Investments in stocks and bonds of, and advances to, subsidiary and connecting companies and in miscellaneous property. These investments include stocks of the Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $8,018,088.		$4,220,909
Receivables		
Current accounts receivable from telephone subscribers and amounts receivable from connecting companies and others.		47,277,423
Temporary Cash Investments		
Funds, mainly those of the American Telephone and Telegraph Co., temporarily invested and held available for conversion into cash as needed by Associated Companies for extensions to their properties.		48,537,040
Cash		
Funds on hand and in banks to meet current needs.		
Total Assets		$2,938,003,819

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus and Reserves.

[fol. 3656] Bell System Financial Statements

Bell System Balance Sheet, December 31, 1925, Continued

(Inter-Company Duplications Excluded)

Liabilities

Capital Stock (Including Installments)		$1,144,618,690
Par value of capital stock outstanding in hands of public, including installment payments of $27,756,200 on stock not yet issued. Increase during year $51,045,828.		
Common		
American Telephone & Telegraph Co.	$921,597,500	
Associated Companies	89,462,843	
Preferred		
Associated Companies	105,802,147	
Installments		
American Telephone & Telegraph Co.	27,572,850	
Associated Companies	183,350	
Funded Debt		890,336,995
Face value of funded indebtedness outstanding in hands of public. Increase during year $137,604,398.		
Mortgage Bonds		
Associated Companies	$502,219,065	
Collateral Trust Bonds		
American Telephone & Telegraph Co.	160,332,900	
Associated Companies	414,330	
Debenture Bonds and Notes		
American Telephone & Telegraph Co.	227,224,700*	
Associated Companies	146,000	
Bills Payable		672,000

* Includes $4,488,400 "Convertible Bonds" in respect of which the conversion privilege has expired.

Short-term obligations payable within one year from date of issue.

Accounts Payable 48,310,063

Current bills for supplies, services, etc.

Accrued Liabilities Not Due 75,374,497

Taxes, interest, rents, etc., applicable to the year 1925, not due and payable until a later date.

Employees' Benefit Funds 30,441,438

Provision for accident and sickness disability benefits, pensions and death benefits under the Employees' Benefit Plan. Increase during year $6,128,348.

Surplus and Reserves 748,250,136

Reserves for depreciation and contingencies, and accumulated surplus of the American Telephone and Telegraph Company and its 25 associated companies invested in the telephone business. Increase during year $69,412,544.

Total Liabilities $2,938,003,819

[fol. 3657]

Bell System Financial Statements

Bell System Income Statement

For Year Ending December 31, 1925

(Inter-Company Duplications Excluded)

Exchange Revenues $506,026,224

Revenues from local exchange service.

Toll Revenues 219,913,020

Revenues from long-distance and local toll service.

Miscellaneous Revenues 15,360,463

Revenues derived from directory advertising and miscellaneous sources.

Total Operating Revenues $741,299,709

Current Maintenance $111,442,827

Cost of inspection, repairs and rearrangements required to keep the telephone plant and equipment in good operating condition, representing 4.8 per cent of the cost of the average plant in service during the year.

Depreciation 115,471,470

Expense resulting from the loss of investment when telephone property is retired from service, based on rates of depreciation for the different classes of property which spread the loss from property consumed in telephone operations uniformly over its service life. Provision during 1925 for this loss represented 5 per cent of the cost of the average plant in service.

Traffic Expenses 185,928,193

Expenses incurred in the handling of telephone calls of which about 85 per cent represents operators' wages.

Commercial Expenses 64,130,638

Expenses incurred in business relations with subscribers; keeping subscribers' accounts, rendering bills for service, making collections, directories, advertising, pay station commissions, etc.

General and Miscellaneous Expenses 30,602,197

Expenses of the Executive, Accounting, Financial and Legal Departments, insurance premiums, sickness, accident and death benefits, pensions and other items of general expense incurred in operating the properties.	
Total Operating Expenses	$507,575,325
Net Operating Revenues	$233,724,384
Uncollectible Revenues	$4,651,579
Revenues earned which, based on experience, cannot be collected.	
Taxes	58,186,816
Federal, state and local taxes applicable to the year's operations.	
Operating Income (Carried forward)	$170,885,989

[fol. 3658]

Operating Income (Brought forward)	$170,885,989
Non-Operating Revenues—Net	19,919,667
Dividends and interest received from investments in the Western Electric Company, Inc., The Bell Telephone Company of Canada, and in subsidiary and connecting companies; interest on bank balances and temporary cash investments, minor rent revenues and other miscellaneous non-operating income.	
Total Gross Income	$190,805,656
Rent and Miscellaneous Deductions	$8,362,061
Mainly rentals paid for the use of buildings, poles, conduits and other facilities.	
Net Earnings available for Interest, Dividends and Appropriations of Income	$182,443,595
Interest Deductions	$45,940,664
Interest charges on funded debt and other debt obligations, including amortization of debt discount.	
Net Income	$136,502,931
Dividends	$93,242,657
To holders of common stock of American Telephone and Telegraph Co.	$81,044,126
Associated Companies	5,236,657
To holders of preferred stock of Associated Companies	6,961,574
Miscellaneous Appropriations of Income	$5,345,580
Amounts appropriated to Employees' Benefit Reserves for sickness and accident disability and for pensions to employees and death benefits to their dependents.	
Balance	$37,914,694

Average Monthly Revenues and Expenses Per Telephone in Bell System for Year Ending December 31, 1925

Total Revenues from all sources	$5.49
Total Expenses including Taxes	4.17

Net Earnings available for Interest, Dividends, Appropriations of Income, Contingencies and Surplus		$1.32
Interest	$0.33	
Dividends	.67	
Appropriations of Income	.04	1.04
Balance for Contingencies and Surplus		$0.28

[fol. 3659] Total Plant per Telephone, December 31st

P. 28:

1910	$157.16
1911	154.81
1912	156.72
1913	153.10
1914	153.04

[fol. 3660] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 46

Annual Report of the American Telephone and Telegraph Company for the Year 1926

P. 6, 8:

An additional transcontinental telephone line was completed to the Pacific Coast in 1926, making a total of three such lines now in operation. The first of these lines, opened in 1915, terminates at San Francisco, and the second, built in 1923, extends through the southwest to Los Angeles. The new line, 2,240 miles in length, traverses the northern part of the country west of Chicago and terminates at Seattle. This line was built to take care of the increasing long-distance telephone business to and from this section of the country. It affords a more direct route and will make it possible to give better and faster long-distance telephone service to the Pacific northwest. It also adds to the dependability of the transcontinental service, for it is unlikely that any storm would interrupt service on all three lines at once.

The toll cable between New York and Chicago which was completed in 1925 has been extended to St. Louis, and further extensions of toll cable plant are under way. This use of long cables in place of open wires further ensures the dependability of long-distance service. Today over 60

per cent of toll and long-distance telephone calls are handled through cables.

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During 1926 an adjustment in long-distance rates was made by the American Telephone and Telegraph Company amounting to a reduction of about $3,000,000 annually.

In 1915 the American Telephone and Telegraph Company for the first time transmitted by wireless spoken words across the Atlantic to Paris and across our continent and out into the Pacific as far as Hawaii. This experiment led [fol. 3661] to further developments and on January 7, 1927, regular commercial transoceanic radio telephone service was inaugurated between New York and London, a most important step forward in the art of telephone communication, the ultimate results of which no one can foresee.

The service for the transmission of pictures by wire inaugurated in 1925 has been extended to Boston, Cleveland, St. Louis, Atlanta and Los Angeles, so that this service is now commercially available between these cities in addition to New York, Chicago and San Francisco.

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P. 18:

[fol. 3662] American Telephone and Telegraph Company

Balance Sheet, December 31, 1926

Assets

Stocks of Associated Companies.....	$1,173,871,373.89
Investment at cost, in stocks of Associated Telephone Companies. Increase during year $146,422,744.	
Stocks of Other Companies.....	79,900,323.46
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Decrease during year $528,523.	
Bonds and Notes of, and Advances to, Associated Companies	217,684,077.65
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,561,000 investment in bonds. Decrease during year $16,776,252.	
Bonds and Notes of, and Advances to, Other Companies..	9,695,800.00
Loans and advances to affiliated and subsidiary companies. Decrease during year $11,880,366.	
Long Lines Plant and Equipment.....	183,447,052.83
Increase during year $29,015,941.	
Telephones	44,985,330.70
Increase during year $3,755,854.	
Office Furniture and Fixtures.....	1,042,363.11
Accounts Receivable	13,736,632.80
Temporary Cash Investments.....	91,949,960.73

Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements of Associated Companies for the extension of their properties.	
Cash	24,789,173.30
Total Assets	$1,841,102,088.47

P. 19:

[fol. 3663]

Liabilities

Capital Stock	
Par value of capital stock outstanding. Increase during year $142,780,300.	$1,064,327,800.00
Capital Stock Installments	
Installments paid on stock subscribed for but not yet issued.	48,468,879.37
Funded Debt	
Face value of debt obligations in the form of bonds and debentures. Decrease during year $2,502,200.	385,190,400.00
Dividend Payable January 15, 1927	23,947,359.75
Accounts Payable	8,905,731.95
Interest and Taxes Accrued, Not Due	12,166,977.85
Reserve for Employees' Benefit Fund	7,000,000.00
Reserves for Depreciation and Contingencies	102,099,037.16
Increase during year $10,837,703.	
Surplus (Including Capital Stock Premiums)	188,995,902.39
Total accumulated surplus, including $44,885,063 received in excess of par value for capital stock. Increase during year $29,846,338. Includes $23,947,376 appropriated for regular dividend, already declared, payable April 15, 1927.	
Total Liabilities	$1,841,102,088.47

P. 20: C. A. Heiss, Comptroller.

[fol. 3664] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1926

Earnings:	
Dividends	
Dividends on stocks owned.	$91,963,934.51
Interest	
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	14,155,209.42
Telephone Operating Revenues	
Revenues under contracts for furnishing instruments and services, and revenues from operation of the long-distance lines.	91,323,925.27
Miscellaneous Revenues	467,896.62
Total	$197,910,965.82
Expenses	58,979,578.97
Net Earnings	$138,931,386.85
Deduct interest	21,940,986.18
Net Income	$116,990,400.67
Deduct Dividends	86,496,345.50
Balance	$30,494,055.17

Carried to Reserve for Contingencies	$4,000,000.00
Carried to Surplus	26,494,055.17
Average number of shares of capital stock outstanding during year	9,790,262
Net earnings per share available for dividends, 1926 (after interest charges)	$11.95

C. A. Heiss, Comptroller.

P. 24:

[fol. 3665] Bell System Balance Sheet, December 31, 1926 (Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,783,023,059
Increase during year $258,117,469.	
General Equipment, Tools and Supplies	73,841,666
Increase during year $4,507,059.	
Investments	168,708,432
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $4,980,182.	
Receivables	91,150,292
Temporary Cash Investments	93,224,121
Cash	46,688,540
Total Assets	$3,256,636,110

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus and Reserves.

P. 25:

[fol. 3666] Liabilities

Capital Stock (Including Installments)		$1,312,881,184
Par value of capital stock outstanding in hand of public including installment payments of $49,178,244 on stock not yet issued. Increase during year $168,262,494.		
Common Stock:		
American Telephone and Telegraph Co.	$1,064,327,800	
Associated Companies	89,715,293	
Preferred Stock:		
Associated Companies	109,659,847	
Installments:		
American Telephone and Telegraph Co.	48,468,879	
Associated Companies	709,365	
Funded Debt		921,523,000
Face value of funded indebtedness outstanding in hands of public. Increase during year $31,186,005.		
Mortgage Bonds	$536,158,270	
Collateral Trust Bonds:		
American Telephone and Telegraph Co.	159,535,909	
Associated Companies	414,330	
Debenture Bonds:		
American Telephone and Telegraph Co.	225,414,500	

Bills Payable	863,075
Short-term obligations payable within one year from date of issue.	
Accounts Payable	57,043,236
Current bills for supplies, services, etc.	
Accrued Liabilities Not Due	88,823,683
Employees' Benefit Funds	35,519,438
Provision for accident and sickness disability benefits, pensions and death benefits under the Employees' Benefit Plan. Increase during year $5,078,000.	
Surplus and Reserves	839,982,494
Increase during year $91,732,385.	
Total Liabilities	$3,256,636,110

P. 27:

[fol. 3667] Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1926 (Inter-Company Duplications Excluded)

Exchange Revenues	$557,489,795
Toll Revenues	248,086,768
Miscellaneous Revenues	17,640,172
Total Operating Revenues	$823,216,735
Current Maintenance	$125,798,424
Depreciation Expense	127,605,695
Traffic Expenses	197,652,650
Commercial Expenses	71,362,726
General and Miscellanous Expenses	32,419,840
Total Operating Expenses	$554,840,335
Net Operating Revenues	268,376,400
Uncollectible Revenues	5,289,008
Taxes	69,688,202
Operating Income (Carried forward)	$193,399,190

P. 27:

[fol. 3668] Operating Income (Brought forward)		$193,399,190
Non-Operating Revenues—Net		21,329,492
Total Gross Income		$214,728,682
Rents and Miscellaneous Deductions		9,858,333
Net Earnings available for Interest, Dividends and Appropriations of Income.		$204,870,349
Interest Deductions		49,809,330
Net Income		$155,061,019
Dividends		100,614,437
To holders of common stock of American Telephone and Telegraph Co.	$86,496,346	
Associated Companies	6,941,370	
To Holders of preferred stock of Associated Companies	7,176,721	
Miscellaneous Appropriations of Income		5,048,000
Balance		$49,398,582

Average Monthly Revenues and Expenses per Telephone in Bell System for Year Ending December 31, 1926

Total Revenues from all sources		$5.69
Total Expenses including Taxes		4.31
Net Earnings available for Interest, Dividends, Appropriations of Income, Contingencies and Surplus		$1.38
Interest	$0.34	
Dividends	.68	
Appropriations of income	.03	
		1.05
Balance for Contingencies and Surplus		$0.33

[fols. 3669] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 47

Annual Report of the American Telephone and Telegraph Company for the Year 1927

P. 8:

The gross operating revenues of the Bell System for 1927 were $894,699,000 or an increase of 8.7 per cent over the previous year. At the same time the average investment in plant devoted to furnishing service increased 10 per cent. The net earnings available for interest and dividends, exclusive of the $47,938,865 special and non-recurring dividend from the Western Electric Company, Inc., were at the rate of 6.4 per cent of the amount invested in plant and other assets. This compares with the rate of net earnings of 6.6 per cent in 1926.

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P. 10:

The transatlantic service, which was inaugurated in January, 1927, between New York City and London subscribers, was extended during the succeeding two months to all of the United States and England, Scotland and Wales. In March this service to Great Britain was made available to Cuba and in October to five cities in Canada. Early in 1928 transatlantic service began to be extended to various cities of continental Europe.

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P. 11:

The extension of toll cables during the year has further insured the dependability of long-distance service and provided for a large number of circuits to take care of increased traffic. The toll cable between New York and Cleveland via Albany and Buffalo, which was started in 1926, was completed, and the cable on the southern route was extended from Washington to Richmond and Petersburg. More than one-half of the total number of Bell-owned tele- [fol. 3670] phones in the country are served from exchanges having direct connection with the toll cable network.

There has been a marked increase in the use of carrier current systems by which a number of independent telephone conversations are simultaneously carried by a single pair of wires. During the year 65,000 miles of carrier circuits were added to the System, including new and improved types. It is planned during the present year to place in service over 100,000 additional miles of carrier circuit.

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P. 14:

[fol. 3671] American Telephone and Telegraph Company

Balance Sheet, December 31, 1927

Assets

Stocks of Associated Companies	$1,347,823,005.80
Investment, at cost, in stocks of associated telephone companies. Increase during year $173,951,632.	
Stocks of Other Companies.....	80,342,690.38
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $442,367.	
Bonds and Notes of, and Advances to, Associated Companies	202,449,711.82
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,341,000 investment in bonds. Decrease during year $15,234,366.	
Notes of, and Advances to, Other Companies.....	9,075,000.00
Loans and advances to affiliated and subsidiary companies. Decrease during year $620,800.	
Long Lines Plant and Equipment.....	215,248,143.77
Increase during year $31,801,091.	
Office Furniture and Fixtures.....	1,202,905.02
Accounts Receivable	14,270,713.48
Temporary Cash Investments	58,463,853.57
Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements.	
Cash	20,814,033.59
Total assets	$1,949,690,057.43

P. 15:

[fol. 3672] **Liabilities**

Capital Stock		$1,103,415,600.00
Par value of capital stock outstanding. Increase during year $39,087,800.		38,873,600.49
Capital Stock Installments		
Installments paid on stock subscribed for but not yet issued.		384,097,900.00
Funded Debt		
—Decrease during year $1,092,500.		624,269.48
Bills Payable		
Note sold to Trustee of Pension Fund.		24,826,783.50
Dividend Payable January 16, 1928		5,719,145.21
Accounts Payable		13,236,526.01
Interest and Taxes Accrued, Not due		6,902,030.21
Reserve for Employees' Benefit Fund		
Provision for accident and sickness disability benefits, pensions and death benefits.		99,558,220.68
Reserves for Depreciation and Contingencies		
Decrease during year $2,540,816.		272,435,981.85
Surplus (including Capital Stock Premiums)		
Total accumulated surplus, including $49,177,778 received in excess of par value for capital stock. Increase during year, $83,440,079, comprising:		
Net Income carried to Surplus	$31,234,976	
Special and non-recurring dividend from Western Electric Company, Inc.	47,938,865	
Premiums on capital stock issued during year	4,292,715	
Less Miscellaneous Deductions (net)	26,477	
Total liabilities		$1,949,690,057.43

P. 16:

[fol. 3673] **American Telephone and Telegraph Company**

Statement of Earnings and Expenses for the year ending December 31, 1927

Earnings:	
Dividends	$99,956,734.63
Dividends on stocks owned, except special and non-recurring dividend of $47,988,865 from Western Electric Co., Inc.	15,998,396.45
Interest	
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	99,866,791.04
Telephone Operating Revenues	
Revenues under contracts for furnishing instruments and services, and revenues from operation of the long-distance lines.	702,902.28
Miscellaneous Revenues	
Total	$216,524,824.40
Expenses	66,140,929.57
Net Earnings	$150,383,894.83
Deduct Interest	21,768,984.71

Net Income	$128,614,910.12
Deduct Dividends	97,379,934.00
Balance Net Income carried to Surplus	$31,234,976.12
Add special dividend from Western Elec. Co., Inc.	47,938,865.00
Non-recurring dividend paid during year representing profits accumulated over a period of years in activities apart from its business with Bell System telephone companies.	
Total carried to Surplus	$79,173,841.12
Average number of shares of capital stock outstanding during year	10,932,420
Net earnings per share available for dividends (after interest charges and excluding special Western Electric dividend)	$11.76

P. 20:

[fol. 3674] Bell System Balance Sheet, December 31, 1927

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$3,013,985,120
Increase during year $230,962,061.	
General Equipment, Tools and Supplies	76,395,240
Increase during year $2,553,574.	
Investments	169,944,923
Increase during year $1,236,491.	
Receivables	94,537,207
Temporary Cash Investments	58,463,854
Cash	44,140,967
Total Assets	$3,457,467,311

NOTE—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3675] Liabilities

Capital Stock (including Installments)		$1,351,939,840
Par value of capital stock outstanding in hands of public, including installment payments of $38,896,500 on stock not yet issued. Increase during year $39,058,656.		
Common Stock		
American Telephone and Telegraph Co.	$1,103,415,600	
Associated Companies	99,024,793	
Preferred Stock		
Associated Companies	110,602,947	
Installments		
American Telephone and Telegraph Co.	38,873,600	
Associated Companies	22,900	
Funded Debt		919,789,700
Face value of funded indebtedness outstanding in hands of public. Decrease during year $1,733,300.		
Mortgage Bonds		
Associated Companies	535,631,470	

Collateral Trust Bonds		
American Telephone and Telegraph Co.	158,746,400	
Associated Companies	414,330	
Debenture Bonds		
American Telephone and Telegraph Co.	224,997,500	
Bills Payable		7,046,158
Notes sold to Trustee of Pension Fund and other short-term obligations payable within one year.		
Accounts Payable		63,597,120
Current bills for supplies, services, etc.		
Accrued Liabilities Not Due		91,115,456
Employees' Benefit Funds		35,103,647
Provisions for accident and sickness disability benefits, pensions and death benefits.		
Surplus and Reserves		988,875,390
Increase during year $148,892,896.		
The item Surplus and Reserves is comprised of:		
Reserves for Depreciation of Plant and Equipment	$600,663,640	
Reserves for Contingencies	91,258,481	
Surplus (including Capital Stock Premiums)	296,953,269	
Total liabilities		$3,457,467,311

P. 22:

[fol. 3676] Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1927 (Inter-Company Duplications Excluded)

Exchange Revenues	$604,266,112
Toll Revenues	271,174,270
Miscellaneous Revenues	19,258,791
Total Operating Revenues	$894,699,173
Current Maintenance	$139,456,582
Depreciation Expense	141,758,926
Traffic Expenses	203,049,940
Commercial Expenses	79,412,964
General and Miscellaneous Expenses	43,017,342
Total Operating Expenses	$606,695,754
Net Operating Revenues	$288,003,419
Uncollectible Revenues	$5,711,964
Taxes	76,012,254
Operating Income (Carried forward)	$206,279,201

P. 23:

[fol. 3677] Operating Income (Brought Forward)		$206,279,201
Non-Operating Revenues—Net		21,887,749
Total Gross Income		$228,166,950
Rents and Miscellaneous Deductions		$11,596,350
Interest Deductions		50,511,448
Total Deductions		$62,107,798
Net Income		$166,059,152
Dividends		$112,401,125
Dividends—		
To holders of common stock of American Telephone and Telegraph Co.	$97,379,934	
Associated Companies	7,714,927	
To holders of preferred stock of Associated Companies	7,306,264	
Balance Net Income carried to Surplus		$53,658,037
Add special non-recurring dividend from Western Electric Company, Inc		47,938,865
Total carried to surplus		$101,596,892

P. 25:

[fol. 3678] Composition of Capital Obligations in the Hands of the Public, December 31, 1927

Common Stock, Amer. Tel. & Tel. Co	50%
Common Stock, Associated Cos	4%
Preferred Stock, Associated Cos	5%
Funded Debt, Amer. Tel. & Tel. Co	17%
Mortgage Debt, Associated Cos	24%
Total	100%

[fol. 3679] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 48

Annual Report of the American Telephone and Telegraph Company for the Year 1928

P. 1:

The Bell System revenues from [redacted] service increased $40,000,000 or 6.6 per cent [redacted] previous year, and revenues from toll and long-distance service increased $38,000,000 or 14.1 per cent. The increase in total operating revenues was $80,700,000 or 9 per cent. Due in part to additional expenditures for better service, total expenses increased 8.8 per cent and the investment in plant and other assets increased 10.7 per cent. The total plant and other assets at the end of the year amounted to $3,827,000,000. The net earnings for the year of $242,700,000 were at the rate of 6.6 per cent on the cost of plant and other assets.

P. 2:

In accordance with the policy of the Company to pay reasonable and regular dividends only, and for part of the new capital needed to offer additional capital stock to the stockholders on favorable terms, quarterly dividends of $2.25 a share were paid during the year, and an offer at par of $185,863,000 of stock of this Company was made to stockholders of record June 1, 1928. More than 264,000 subscriptions were received for this new stock. The money from this issue is being used by the Associated Companies of the Bell System and the Long Lines Department of the American Telephone and Telegraph Company for plant and equipment.

P. 3:

With the exception of a few places where rates are clearly inadequate, and in spite of the tendency for the cost of furnishing local service to increase as the extent of the service increases, the continuing technical advances in the telephone art and improvements in operation methods should enable the System to provide ever increasing service in local areas without further increase in rates. [fol. 3680] Through the increased number of telephones with which a subscriber may communicate and through improved service, the cost of telephone service is actually

becoming less and less in that the telephone user is buying more and better service for the same money.

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P. 6:

Long-distance Service

The most striking development in the telephone business in the United States during 1928 has been the increased use of the telephone for long-distance calls. While this use has been undoubtedly stimulated by general business activity and the rate reductions made in 1926 and 1927, the increased speed and improved quality of service have been the largest contributing factors.

The total number of messages handled over the long-distance lines of the American Telephone and Telegraph Company was 18 per cent in excess of those handled in the previous year. For the longer distances, such as between the Atlantic and Pacific Coasts, the increase has been 100 per cent. The country is becoming "long-distance minded" and is acquiring a new telephone habit.

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P. 8:

At the same time that the number of long-distance telephone messages has been increasing, the other services furnished through the use of the long-distance plant have been steadily growing. Chain broadcasting on a national scale, which has become such an important factor in the life of the nation, is making extensive use of telephone wires for the inter-connection of broadcasting stations located throughout the country.

Press associations, manufacturing enterprises, commercial and banking houses, are making more and more use of [fol. 3681] net-works of circuits leased for their own exclusive use between widely separated points. The majority of these circuits are operated as telegraph or typewriter circuits, although many are for telephone use.

In eight of the principal cities, offices are maintained for the transmission of pictures by wire, and during 1928 arrangements were made with the telegraph companies by which facsimile telegrams and messages are sent over this telephoto system.

Transatlantic Service

The volume of transatlantic telephone business continues to increase and has at times overloaded the radio-telephone facilities. A short-wave channel is now in use supplementing the long-wave channel.

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P. 9, 10:

Television was first demonstrated in the Bell Telephone Laboratories in 1927. In 1928 further progress was made and a new transmitting device which is capable of putting upon the television circuit outdoor scenes was developed. Work on television with the idea that it might ultimately be supplemental to the telephone is being continued.

The Bell Telephone Laboratories have the scientific knowledge that would enable them to set up circuits which could carry instantaneously the human voice and the human sight around the world, but how to make this economically practical is yet to be discovered. Progress will undoubtedly be made by a gradual extension of the present limits.

Contracts With the Telegraph Companies

In 1928 the American Telephone and Telegraph Company made contracts for the use of plant with the Western Union Telegraph Company and the Postal Telegraph-Cable [fol. 3682] Company intended to further the development of electrical communications. These contracts should ultimately result in eliminating to a large extent the duplication of parallel pole lines and wire circuits, since by the use of proper apparatus it is possible to telephone and telegraph simultaneously over telephone toll and long distance wires.

The telegraph companies also may lease apparatus developed in the Bell Telephone Laboratories by which under certain conditions a greatly increased number of messages may be sent simultaneously over a single pair of telegraph wires. By these arrangements many of the advantages that would accrue from the consolidation of all electrical communications will be obtained and at the same time the complete independence of the telephone and telegraph companies will be maintained.

Electrical Research Products, Incorporated

The developments and inventions of the Bell Telephone Laboratories to meet the needs of the Bell System have resulted in valuable contributions to the progress of electrical science outside the strictly telephone field. To make these developments and inventions available in such other fields Electrical Research Products was organized in December, 1926, as a wholly-owned subsidiary of the Western Electric Company. Thus the non-telephone activities are given the special attention that they demand without conflict with the telephone work of the Bell System.

P. 14:

[fol. 3683] American Telephone and Telegraph Company

Balance Sheet, December 31, 1928

Assets

Investments:	
Stocks of Associated Companies	$1,498,895,557.01
Investment, at cost, in stocks of associated telephone companies. Increase during year $151,072,551.	
Stocks of Other Companies	91,663,691.36
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $11,321,001.	
Bonds and Notes of, and Advances to, Associated Companies	190,210,873.07
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,167,000 investment in bonds of Home Long Distance Telephone Co. (San Francisco). Decrease during year $12,238,839.	
Notes of, and Advances to, Other Companies	8,550,000.00
Loans and advances to affiliated and subsidiary companies, comprising the Bell Telephone Laboratories, Inc., $1,300,000, the Bell Telephone Securities Company, $2,300,000 and the 205 Broadway Corporation, $4,950,000. Decrease during year $525,000.	
Plant and Equipment:	
Long Lines Plant and Equipment	262,233,248.19
Increase during year $46,985,104.	
General Equipment	1,285,059.33
Current assets:	
Accounts Receivable	15,913,064.98
Temporary Cash Investments	122,880,924.01
Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements.	
Cash	20,695,267.43
Total assets	$2,213,327,685.38

P. 15:
[fol. 3684]

Liabilities

Capital Stock:	
Stock Issued and Outstanding	$1,289,691,400.00
Total par value of shares outstanding. Increase during year $186,275,800.	
Installments	57,870,062.99
Installments paid on stock subscribed for but not yet issued.	
Long-Term Debt:	
Bonds and Debentures	380,196,000.00
Decrease during year $3,901,900.	
Notes	8,409,914.58
Notes sold to Trustee of Pension Fund.	
Current Liabilities:	
Dividend Payable January 15, 1929	28,991,317.50
Accounts Payable	10,806,868.22
Interest and Taxes Accrued, not due	15,337,308.14
Surplus and Reserves:	
Reserves for Depreciation and Contingencies	106,619,402.10
Increase during year $7,061,181.	
Surplus (Including Capital Stock Premiums)	317,405,414.85
Accumulated surplus, including $55,027,713 received in excess of par value for capital stock.	
Increase during year, $44,969,433, comprising:	
Net Income carried to Surplus $39,349,051	
Premiums on capital stock issued during year 5,849,935	
Less Miscellaneous Deductions (net) 229,553	
Total liabilities	$2,213,327,685.38

C. A. Heiss, Comptroller.

P. 16:
[fol. 3685] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1928

Earnings:	
Dividends	$119,176,197.08
Dividends on stocks owned.	
Interest	15,420,239.12
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	
Telephone Operating Revenues	100,583,826.46
Revenues from operating of the long-distance lines and revenues from services furnished under contracts with the Associated Companies.	
Miscellaneous Revenues	601,715.36
Total	$235,781,978.02
Expenses	70,513,928.70
Net Earnings	$165,268,049.32
Deduct Interest	22,097,557.99
Net Income	$143,170,491.33
Deduct Dividends	103,821,439.95
Balance Net income Carried to Surplus	$ 39,349,051.38

Average number of shares of capital stock outstanding during year	11,823,745
Net earnings per share available for dividends (after interest charges)	$12.11

C. A. Heiss, Comptroller.

P. 19:

[fol. 3686] The number of stockholders of this Company has increased from 7,535 in 1900 to 454,596 at the end of 1928. During 1928 the increase was 31,016.

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P. 20:

Bell System Balance Sheet, December 31, 1928

(Inter-Company Duplications Excluded)

Assets

Telephone Plant		$3,275,686,848
Increase during year $261,701,728.		
General Equipment, Tools and Supplies		87,874,623
Increase during year $11,479,383.		
Investments		182,167,491
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $12,222,568.		
Accounts Receivable		107,915,673
Temporary Cash Investments		126,268,518
Cash		46,770,431
Total assets		$3,826,683,584

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3687]

Liabilities

Capital Stock (Including Installments)		$1,564,644,118
Par value of capital stock outstanding in hands of public, including installments payments of $57,876,578 on stock not yet issued. Increase during year $212,704,278.		
Common Stock		
American Telephone and Telegraph Co.	$1,289,691,400	
Associated Companies	106,260,793	
Preferred Stock		
Associated Companies	110,815,347	
Installments		
American Telephone and Telegraph Co.	57,870,063	
Associated Companies	6,515	
Long-Term Debt		964,783,700

Face value of funded obligations outstanding in hands of public. Increase during year $38,223,714.		
Mortgage Bonds		
Associated Companies	$531,290,140	
Collateral Trust Bonds		
American Telephone and Telegraph Co.	154,806,500	
Associated Companies	414,330	
Debenture Bonds		
American Telephone and Telegraph Co.	224,868,500	
Notes		
American Telephone and Telegraph Co.	8,409,912	
Associated Companies	46,994,318	
Bills Payable		377,700
Short-Term obligations payable within one year.		
Accounts Payable		78,043,486
Current Bills for supplies, services, etc.		
Accrued Liabilities Not Due		101,099,388
Reserves for Depreciation of Plant and Equipment		650,621,336
Increase during year $2,057,528.		
Reserves for Contingencies		93,316,009
Increase during year $2,057,528.		
Surplus (Including Capital Stock Premiums).		
Accumulated surplus, including amounts received in excess of par value for capital stock. Increase during year $76,844,578.		
Total liabilities		$3,826,683,584

P. 22:
[fol. 3688] Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1928

(Inter-Company Duplications Excluded)

Exchange Revenues	$644,209,046
Toll Revenues	309,334,350
Miscellaneous Revenues	21,883,427
Total Operating Revenues	$975,426,823
Current Maintenance	$154,455,282
Depreciation Expense	153,875,717
Traffic Expenses	212,046,089
Commercial Expenses	88,802,497
General and Miscellaneous Expenses	50,880,236
Total Operating Expenses	$660,059,821
Net Operating Revenues	$315,367,002
Uncollectible Revenues	$6,189,656
Taxes	81,259,679
Operating Income (Carried Forward)	$227,917,667

P. 23:

Operating Income (Brought Forward)		$227,917,667
Non-Operating Revenues—Net		27,621,433
Total Gross Income		$255,539,100
Rents and Miscellaneous Deductions		$12,816,666
Net Earnings		$242,722,434
Interest Deductions		$51,634,795
Net Income		$191,087,639
Dividends		$119,348,612
To holders of common stock of American Telephone and Telegraph Co.	$103,821,440	
Associated Companies	8,204,916	
To holders of preferred stock of Associated Companies	7,322,256	
Balance		$71,739,027

[fol. 3689] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 49

Annual Report of the American Telephone and Telegraph Company for the Year 1929

Report of the Board of Directors to the Stockholders for the Year 1929

P. 1:

To provide for growth and to improve service, $588,000,000 was spent on construction of new telephone plant and $45,000,000 on constructio nof new manufacturing facilities. * * *

P. 4:

In part because long-distance calls are not subject in the same degree to this tendency of increasing costs, and largely because of developments in the art which have lessened the cost it has been possible to make substantial reductions in long-distance rates. These reductions are more obvious in that they are measured in dollars. In the case of exchange rates changes favorable to the user are in fact taking place although they are not so obvious in that for the most part they are measured by improved, more extensive and more valuable service for the same money.

P. 5:

During the year two additional short-wave transatlanic radio telephone channels were put in operation. The transatlantic telephone service is now being furnished over one long-wave and three short-wave radio telephone channels. Work is going forward on the new transatlantic telephone cable which will supplement the present radio channels and add a connecting link that is not subject to the inherent uncertainties of radio. Early in 1930 it is expected to inaugurate telephone service by short-wave radio with the Argentine, and plans are under way for the establishment of a short-wave telephone station on the Pacific Coast for radio telephone communication with Hawaii and other points in the Pacific.

[fol. 3690] In December, ship-to-shore service was inaugurated to and from the steamship Leviathan and it is expected that in due course this service will be extended to other steamships.

P. 6:

Marked progress has been made during the year in the development of telephone communication with airplanes. A large number of trials and demonstrations have shown that satisfactory two-way telephony is possible between airplane and any telephone connected in or with the Bell System. In several of the tests commercially satisfactory communication was maintained between an airplane here and telephone stations in Europe. This involved radio transmission from the airplane to the Bell telephone wire system in the United States, the transatlantic radio and the regular telephone wire system in Europe. The successful demonstrations of our development of two-way plane-to-ground telephony have caused several of the larger air transport companies and several of the Government departments to request us to equip a considerable number of planes and ground stations with apparatus. This equipment of airplanes with telephones for navigational purposes will add greatly to the safety and efficiency of transportation by air. Ultimately it is expected that telephone service will be established between airplanes and any telephone anywhere that is connected with the Bell System.

P. 7:

The striking increase in the use of the telephone for long-distance calls, so noticeable in 1928, has continued during the past year, reflecting the public's response to the steadily increasing speed and quality of service and the reductions in charges for the service. While the use of long-distance has been increasing so rapidly, the telephone user, stimulated in part by the telephone companies' efforts, is equipping his office and particularly his residence with more telephones, with a view to greater convenience and utility.

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[fol. 3691] The fundamental physical conditions which underlie efficient telephone and telegraph operation are such that large expansion either in volume of service given or in range of distance covered cannot be made economically—frequently cannot be made at all—merely by an enlarged use of existing instrumentalities.

For example, the commercial necessity for very long circuits in storm-proof cable and the need for a higher grade of transmission over such circuits, have required an entirely new adaptation of physical principals many of which are themselves new and therefore applicable only in the hands of those who are highly trained. Due to the fact that the telephone plant is a complex interconnected structure, all parts of which must function harmoniously, on every connection if satisfactory results are to be assured, the introduction of new and improved facilities in one part of the plant frequently requires modification of existing plant which would otherwise be satisfactory.

P. 8:

During the past year, in addition to completing a large number of important developments connected with central office and outside plant equipment, noteworthy progress has been made in extending the range, improving the quality of transmission and cheapening the cost of the long-distance plant, particularly that part involved in the longer distances. Initial designs of commercial two-way radio telephone equipment for use in airplane-to-ground and ship-to-shore service were completed and put in production. On the transatlantic telephone cable project the final development work,

both on the cable itself and on the very intricate terminal apparatus required, has progressed and is rapidly nearing the point where final manufacturing specifications can be prepared.

P. 9:

[fol. 3692] The Western Electric recording system is being used, under licenses granted by Electrical Research Products, by the majority of the motion picture producers; it is installed in about 70 studios and used for the production of about 90 per cent of the talking pictures being made today. Electrical Research Products has installed Western Electric reproducing apparatus in 3,300 theatres in the United States and in 1,100 theatres abroad. These installations are inspected and maintained by Electrical Research Products, in order that there may be continuity and reliability of operation.

P. 10:

In 1929 the Bell System revenues from local exchange service increased $47,000,000 or 7.3 per cent over the previous year, and revenues from toll and long-distance service increased $45,000,000 or 14.5 per cent. The increase in total operating revenues was $95,000,000 or 9.8 per cent. Due in part to additional expenditures for better service, the total expenses increased 11 per cent and investment in plant and other assets increased 10.5 per cent. The total plant and other assets at the end of the year amounted to $4,228,000,000. The net earnings for the year were at the rate of 6.8 per cent on the cost of plant and other assets.

P. 11:

The number of stockholders of the Company increased from 454,596 at the end of 1928 to 469,801 at the end of 1929. The average number of shares held per stockholder is now 28. No single individual holds as much as one per cent of the total capital stock. Of the total number of stockholders about 90,000 are Bell System employees.

P. 14:

[fol. 3693] American Telephone and Telegraph Company

Balance Sheet, December 31, 1929

Assets

Investments:	
Stock of Associated Companies	$1,589,327,375.20
Investment at cost, in stocks of associated telephone companies. Increase during year $90,431,818.	
Stock of Other Companies	138,158,952.98
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $46,495,262.	
Bonds and Notes of, and Advances to, Associated Companies	305,783,932.88
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,388,000 investment in bonds of these companies. Increase during year $115,573,060.	
Notes of, and Advances to, other Companies	32,499,000.00
Loans and advances to affiliated and subsidiary companies, comprising the Western Electric Co., Inc., $16,499,000; Bell Telephone Securities Company, $9,350,000; 205 Broadway Corporation, $4,850,000, and Bell Telephone Laboratories, Inc., $1,800,000. Increase during year $23,949,000.	
Plant and Equipment:	
Long Lines Plant and Equipment	349,533,182.86
Increase during year $87,299,935.	
General Equipment	1,399,036.86
Current Assets:	
Accounts Receivable	18,934,933.31
Temporary Cash Investments	20,591,188.85
Funds temporarily invested in municipal, state and United States Government short-term obligations in anticipation of financial requirements.	
Cash	20,795,947.88
Total assets	$2,477,023,550.88

P. 15:

[fol. 3694] Liabilities

Capital Stock:	
Stock Issued and Outstanding	$1,322,339,800.00
Total par value of shares outstanding. Increase during year $32,648,400.	
Installments	72,155,611.96
Installments paid on stock subscribed for but not yet issued.	
Long-term Debt:	
Bonds and Debentures	521,445,700.00
Face value of debt obligations in the form of bonds and debentures. Increase during year $141,249,700.	
Notes	9,872,603.48

Notes sold to Trustee of Pension Fund.	
Current Liabilities:	
Dividend Payable January 15, 1930	29,752,456.50
Accounts Payable	19,048,670.68
Interest and Taxes Accrued, Not due	17,373,768.32
Surplus and Reserves:	
Reserves for Depreciation and Contingencies	114,652,403.79
Increase during year $8,033,002.	
Surplus (Including Capital Stock Premiums)	370,382,536.15
Accumulated surplus, including $69,335,422 received in excess of par value for capital stock.	
Increase during year, $52,977,121, comprising:	
Net Income carried to Surplus.. $49,810,987	
Miscellaneous Additions (net).. 3,166,134	
Total liabilities	$2,477,023,550.88

C. A. Heiss, Comptroller.

P. 16:

[fol. 3695] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1929

Dividends	$140,911,590.50
Interest	21,563,034.70
Telephone Operating Revenues	111,890,241.42
Miscellaneous Revenues	1,331,040.59
Total	$275,695,907.21
Expenses	81,873,035.18
Net Earnings	$193,822,872.03
Deduct Interest	27,633,114.31
Net Income	$166,189,757.72
Deduct Dividends	116,378,771.00
Balance Net Income carried to Surplus	$49,810,986.72
Average number of shares of capital stock outstanding during year	13,113,746
Net earnings per share available for dividends (after interest charges)	$12.67

C. A. Heiss, Comptroller.

P. 20:

[fol. 3696] Bell System Balance Sheet, December 31, 1929

(Inter-Company Duplications Extended)

Assets

Telephone Plant	$3,671,099,689
Increase during year $395,412,841.	
General Equipment, Tools and Supplies	110,874,388
Increase during year $22,999,965.	
Investments	232,928,595
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $50,761,104.	

Accounts Receivable	142,665,648
Temporary Cash Investments	22,086,502
Cash	48,775,266
Total Assets	$4,228,430,088

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3697] Liabilities

Capital Stock (Including Installments)		$1,611,862,252
Par value of capital stock outstanding in hands of public, including also installment payments on stock not yet issued. Increase during year $47,218,134.		
Common Stock:		
American Telephone and Telegraph Co.	$1,322,339,800	
Associated Companies	106,339,943	
Common Stock Installments:		
American Telephone and Telegraph Co.	72,155,612	
Associated Companies	202,450	
Preferred Stock:		
Associated Companies	110,824,447	
Long-Term Debt		$1,148,539,684
Face value of funded obligations outstanding in hands of public. Increase during year $183,755,984.		
Mortgage Bonds:		
Associated Companies	559,445,579	
Collateral Trust Bonds:		
American Telephone and Telegraph Co.	79,371,000	
Associated Companies	414,330	
Debenture Bonds:		
American Telephone and Telegraph Co.	222,711,500	
Convertible Bonds:		
American Telephone and Telegraph Co.	218,952,200	
Notes:		
American Telephone and Telegraph Co.	9,872,603	
Associated Companies	57,772,472	
Bills Payable		553,200
Accounts Payable		93,352,580
Accrued Liabilities Not Due		117,594,722
Reserves for Depreciation of Plant and Equipment		699,034,674
Increase during year $48,413,338.		
Reserve for Contingencies		81,628,149
Provision for contingencies. Decrease during year $11,687,860.		
Surplus (Including Capital Stock Premiums)		475,864,827
Accumulated surplus, including amounts received in excess of par value for capital stock. Increase during year $102,066,980.		
Total Liabilities		$4,228,430,088

P. 22:

[fol. 3698] Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1929 (Inter-Company Duplications Excluded)

Exchange Revenues		$691,358,926
Toll Revenues		354,285,899
Miscellaneous Revenues		25,149,674
Total Operating Revenues		$1,070,794,499
Current Maintenance		179,698,948
Depreciation Expense		164,376,990
Traffic Expenses		228,066,039
Commercial Expenses		102,166,689
General and Miscellaneous Expenses		58,674,901
Total Operating Expenses		$732,983,567
Net Operating Revenues		$337,810,932
Uncollectible Revenues		7,161,202
Taxes		83,467,947
Operating Income (Carried forward)		$247,181,783

P. 23:

[fol. 3699] Operating Income (Brought Forward)		$247,181,783
Non-Operating Revenues—Net		43,965,939
Total Gross Income		$291,147,722
Rents and Miscellaneous Deductions		$14,461,058
Net Earnings		$276,686,664
Interest Deductions		$59,581,792
Net Income		$217,104,872
Dividends		$132,223,835
To holders of preferred stock of Associated Companies	$7,326,523	
To holders of common stock of Associated Companies	8,518,541	
American Telephone and Telegraph Company	116,378,771	
Balance		$84,881,037

P. 27:

[fol. 3700] During 1929 plant construction, i. e., expenditures for additions, betterments, and replacements to the Bell System telephone plant, amounted to $588,000,000, an increase of $159,300,000 over the year 1928.

As indicated in the chart above, the forecast for the year 1930 is approximately $700,000,000, an average expenditure of nearly $2,000,000 a day.

[fol. 3701] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 50

Annual Report of the American Telephone and Telegraph Company for the Year 1930

P. 1.

There was a net gain in the number of telephones installed of 122,500 which compares with 821,400 in 1929. The total number of local telephone conversations was two per cent and the total number of toll and long-distance conversations was one per cent above 1929.

* * * * * * *

The net earnings were $267,874,000, which is $8,800,000 less than in 1929 and at the rate of 5.8 per cent on the cost of plant and other assets.

The number of stockholders of the American Telephone and Telegraph Company at the end of 1930 was 567,694, an increase of 97,983 for the year.

P. 2:

During the year 2,579,407 shares of stock of this Company were offered to stockholders of record May 23rd and 2,061,897 shares were issued in exchange for convertible bonds. This resulted in an average number of shares outstanding of 15,856,696 as compared with 13,113,746 in 1929. The earnings of the Company per average share outstanding were $10.44 compared with $12.67 in 1929.

* * * * * * *

P. 6:

In January, 1927, the United States had telephone connection only with Canada, Cuba and the Mexican border. Today practically any telephone in the United States can be connected with any one of 32,200,000 out of 35,300,000 telephones in the world.

The only countries with more than 100,000 telephones (there are 1,780,000 in New York City) to which the Bell [fol. 3702] System is not now connected, are

Japan	940,000 telephones.
Russia	370,000 "
Brazil	170,000 "
New Zealand	165,000 "
China	155,000 "
Union of South Africa	110,000 "

P. 7:

Telephone calls across the Atlantic in the four years since such service was started have increased six-fold. In addition to the original long-wave radio telephone channel there are now three short-wave channels. The experimental lengths of the proposed transatlantic telephone cable which have been built and tested confirm the work of the Bell Telephone Laboratories, where the new alloys and insulation necessary for such a cable were developed and where the design of the cable was made.

Present-day radio broadcast service uses interconnecting telephone networks. The circuits in these networks have to be specially designed, constructed, maintained and operated in order to give good results over the wide range of frequencies used in broadcasting. Research in the past year has made great progress in designing new cable circuits which can handle the broadcasting as well as do the specially cared-for open wire lines, and at the same time provide additional insurance against storm damage.

P. 9:

Scientific progress in television was marked by a demonstration of simultaneous two-way television and speech over wires. It was impressive in showing what it is possible to do in the present state of the art in eliminating distance in sight and sound. The equipment, however, remains necessarily complicated and expensive, requiring [fol. 3703] expert attention and large units of apparatus. The commercial possibilities of television are still uncertain.

P. 10:

Electrical Research Products, Inc., a wholly-owned subsidiary of the Western Electric Company, continues to hold its position of leadership in the manufacture of recording and reproducing apparatus for the talking motion picture industry. It has installed Western Electric reproducing systems in 5,000 theatres in the United States and in 2,600 theatres in foreign countries, and through its service organization maintains these equipments at a high standard of operating efficiency.

Financial

In January 1930 the American Telephone and Telegraph Company sold $150,000,000 Thirty-Five Year 5% Gold Debentures dated February 1, 1930.

On April 16 the Company offered its stockholders of record May 23, one share at par for each six shares of stock held. The subscriptions to this offer provided $241,895,832 for the Company's treasury during 1930, and will provide an additional amount of approximately $16,000,000 during 1931.

The conversion privilege of the Ten-Year Convertible Gold Debenture Bonds dated July 1, 1929, became effective on January 1, 1930. From January 1 to May 23, 1930, the bonds at face value could be exchanged for stock at $180 a share, and thereafter until December 31, 1930, at $166.88 per share. By the end of the year $206,189,700 of face value of bonds had been converted into stock by about 130,000 bondholders, yielding the Company cash premiums of $164,855,341. Only $12,923,000 face value of these bonds remained unconverted at the close of the year. During 1931 the conversion price, subject to adjustment as stated in the indenture, is $175.46 per share.

[fol. 3704] On September 30, 1930 the American Telephone and Telegraph Company bought the Teletype Corporation by exchanging 150,000 shares of its own stock for the 150,000 shares of Teletype Corporation stock. The shares of Teletype Corporation stock have been sold to the Western Electric Company.

P. 11:

During the last ten years the capital obligations of the Bell System in the hands of the public have about trebled. They were $1,107,417,000 on December 31, 1920 and $3,271,619,000 on December 31, 1930. During that period the bonds and other debt decreased from 54 to 34 per cent of total capital obligations, while the number of stockholders increased more than 300 per cent.

P. 14:

[fol. 3705] American Telephone and Telegraph Company

Balance Sheet, December 31, 1930

Assets

Investments:	
Stocks of Associated Companies	$1,778,062,693.71
Investment, at cost, in stocks of associated telephone companies. Increase for the year $188,735,318.	
Stocks of Other Companies	168,692,888.28
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase for the year $30,533,935.	
Bonds and Notes of, and Advances to, Associated Companies	320,628,939.64
Temporary financing of Associated Companies for the extension of their telephone properties, including also $755,000 investment in bonds of these companies. Increase for the year $14,845,007.	
Notes of, and Advances to, Other Companies	50,995,500.00
Loans and advances to affiliated and subsidiary companies, other than Associated Companies. Increase for the year $18,496,500.	
Plant and Equipment:	
Long Lines Plant and Equipment	435,311,016.49
Increase for the year $85,777,834.	
General Equipment	1,557,021.42
Current Assets:	
Accounts Receivable	18,820,368.60
Temporary Investments	351,803,743.03
Funds temporarily invested in municipal, state and United States Government short-term obligations and special bank deposits in anticipation of financial requirements.	
Cash	37,054,020.11
Total Assets	$3,162,926,191.28

P. 15:

[fol. 3706] Liabilities

Capital Stock:	
Stock Issued and Outstanding	$1,795,651,200.00
Total par value of shares outstanding. Increase for the year $473,311,400.	
Installments	111,463,036.18

Installments paid on stock subscribed for but not yet issued. Increase for the year $39,307,424.		
Premiums		259,131,602.75
Amount received in excess of par value of capital stock. Increase for the year $189,796,181.		
Long-Term Debt:		
Bonds and Debentures		462,615,700.00
Decrease for the year $58,830,000.		
Notes		11,545,213.59
Notes sold to Trustee of Pension Fund.		
Current Liabilities:		
Dividend Payable January 15, 1931		9,401,814.50
Accounts Payable		23,910,052.98
Interest and Taxes Accrued, Not Due		13,027,007.85
Surplus and Reserves:		
Reserve for Depreciation		58,146,649.09
Increase for the year $8,158,689.		
Reserve for Contingencies		64,664,444.18
Surplus		322,369,470.16
Increase for the year $21,322,356, comprising:		
Net Income carried to Surplus	$26,306,634	
Sundry Deductions (net) principally tax on new capital issues and discount and expense on bonds issued less premium on bonds retired	4,984,278	
Total Liabilities		$3,162,926,191.28

P. 16:

[fol. 3707] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1930

Earnings:	
Dividends	$148,178,885.75
Dividends on stocks owned. As a whole these dividends were earned with a margin of about $10,000,000.	
Interest	28,026,861.17
Interest on notes and advances, on bonds owned, on temporary investments and bank deposits, and on other accounts.	
Telephone Operating Revenues	114,560,865.75
Revenues from operation of the long-distance lines and payments from the Associated Companies for services furnished them under the License contracts.	
Miscellaneous Revenues	1,248,258.40
Total	$292,014,871.07
Expenses	94,034,385.13
Net Earnings	$197,980,485.94
Deduct Interest	32,435,778.78
Net Income	$165,544,707.16
Deduct Dividends	139,238,073.39
Balance for Surplus	$26,306,633.77
Average number of shares of capital stock outstanding during year	15,856,696
Net earnings per share available for dividends (after interest charges)	10.44

P. 19:

[fol. 3708] American Telephone and Telegraph Company

Net Earnings per Share Available for Dividends

	Net Earnings Per Share	Dividends Paid		Net Earnings Per Share	Dividends Paid
1911	$10.01	$8.00	1921	$11.10	$8.75
1912	9.86	8.00	1922	11.14	9.00
1913	9.59	8.00	1923	11.35	9.00
1914	9.38	8.00	1924	11.31	9.00
1915	9.52	8.00	1925	11.79	9.00
1916	9.77	8.00	1926	11.95	9.00
1917	9.48	8.00	1927	11.76	9.00
1918	9.97	8.00	1928	12.11	9.00
1919	10.05	8.00	1929	12.67	9.00
1920	11.72	8.00	1930	10.44	9.00

P. 20:

[fol. 3709] Bell System Balance Sheet, December 31, 1930

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$4,043,421,739
Increase for the year $372,322,050.	
General Equipment, Tools and Supplies	102,727,264
Decrease for the year $8,147,124.	
Investments	283,752,088
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase for the year $50,823,493.	
Accounts Receivable	151,178,536
Temporary Investments	354,774,712
Cash	64,341,462
Total assets	$5,000,195,801

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 22:

[fol. 3710] Bell System Financial Statements

Bell System Income Statement for the Year Ending December 31, 1930
(Inter-Company Duplications Excluded)

Exchange Revenues	$728,709,193
Toll Revenues	348,541,203
Miscellaneous Revenues	26,689,409
Total Operating Revenues	$1,103,939,805
Current Maintenance	$191,056,987
Depreciation Expense	182,400,230
Traffic Expenses	225,291,129

Commercial Expenses	106,347,376
General and Miscellaneous Expenses	67,653,358
Total Operating Expenses	$772,749,080
Net Operating Revenues	$331,190,725
Uncollectible Revenues	$9,056,624
Taxes	86,291,070
Operating Income (Carried Forward)	$235,843,031

* Does not include special dividend from Western Electric Company, Inc.

P. 23:

[fol. 3711] Operating Income (Brought Forward)	$235,843,031
Non-Operating Revenues—Net	47,626,208
Total Gross Income	$283,469,239
Rents and Miscellaneous Deductions	$15,594,814
Net Earnings	$267,874,425
Interest Deductions	$66,228,520
Net Income	$201,645,905
Dividends	$156,625,142
To holders of preferred stock of Associated Companies	$7,318,469
To holders of common stock of Associated Companies	10,068,600
American Telephone and Telegraph Co.	139,238,073
Balance	$45,020,763

P. 24:

[fol. 3712] Bell System Statistics

Security Issues Outstanding December 31, 1930 (Inter-Company Holdings Excluded)

	Par Value
Common Stock (American Telephone and Telegraph Company) (a)	$1,907,114,236
Common Stock (Associated Companies):	
New England Telephone and Telegraph Company	$47,349,300
Southern New England Telephone Company	26,662,600
Cincinnati and Suburban Bell Telephone Company	19,319,250
Mountain States Telephone and Telegraph Company	13,062,200
Pacific Telephone and Telegraph Company	29,910,100
Illinois Bell Telephone Company	1,272,900
Other Associated Companies	14,593
Total Common Stock, Associated Companies	$137,590,943
Preferred Stock (Associated Companies):	
New York Telephone Company 6½%	$25,000,000
Bell Telephone Company of Pennsylvania 6½%	20,000,000
Diamond State Telephone Company 6½%	500,000
Chesapeake and Potomac Tel. Co. of Baltimore City 7%	3,000,000
Ohio Bell Telephone Company 7% (b)	12,359,747
Wisconsin Telephone Company 7%	4,947,000

Northwestern Bell Telephone Company 6½%	4,798,000
Southwestern Bell Telephone Company 7%	21,785,500
Pacific Telephone and Telegraph Company 6%	17,957,300
Total Preferred Stock, Associated Companies	$110,347,547

Bonds and Notes (American Telephone and Telegraph Company (c):	Face Value
Collateral Trust 5s, 1932 (Western Tel. & Tel. Co.)	$9,488,500
Collateral Trust 5s, 1946	67,896,000
Debenture 5s, 1960	120,908,700
Debenture 5s, 1965	149,965,000
Debenture 5½s, 1943	96,481,200
Convertible 4s, 1936 (d)	2,589,000
Convertible 4½s, 1933 (d) (e)	1,870,800
Convertible 4½s, 1939	12,923,000
Notes (sold to Trustee of Pension Fund)	11,545,214
Total Bonds and Notes, American Tel. and Tel. Co.	$473,667,414

Bonds and Notes (Associated Companies) (c):	
New England Telephone and Telegraph Company:	
Debenture 5s, 1932 (f)	$10,000,000
First Mortgage Series A 5s, 1952	35,000,000
First Mortgage Series B 4½s, 1961	40,000,000
Southern New England Telephone Company:	
Debenture 5s, 1970	10,000,000
New York Telephone Company:	
First and General Mortgage 4½s, 1939	61,070,180
Refunding Mortgage Series A 6s, 1941	49,659,000
Debenture 6s, 1949 (f)	19,707,300
Bell Telephone Company of Pennsylvania:	
First Mtge. 5s, 1943 (Central District Telephone Co.)	9,093,500
First and Refunding Mortgage 5s, 1948	35,000,000
First and Refunding Mortgage 5s, 1960	50,000,000
Southern Bell Telephone and Telegraph Company:	
First & Gen. Mtge. 5s, 1937 (Cumberland Tel. & Tel. Co.)	14,969,000
First Mortgage 5s, 1941	47,536,500
Ohio Bell Telephone Company:	
Consolidated 5s, 1944 (Ohio State Telephone Co.)	4,947,000
Illinois Bell Telephone Company:	
First and Refunding Mortgage 5s, 1956	48,976,200
Southwestern Bell Telephone Company:	
First and Refunding Mortgage 5s, 1954	49,238,600
Pacific Telephone and Telegraph Company:	
First Mortgage and Collateral Trust 5s, 1937	27,971,000
First & Ref. Mtg. 5s, 1947 (Southern California Tel. Co.)	5,780,000
Refunding Mortgage 5s, 1952	24,044,000
Minor Bond Issues (21 in number)	22,258,230
Notes (principally notes sold to Trustee of Pension Funds)	72,146,082
Real Estate Mortgages	4,528,217
Total Bonds and Notes, Associated Companies	$641,924,809

(a) Includes installments.
(b) Called for redemption January 1, 1931.
(c) Includes issues assumed or guaranteed.
(d) Conversion privilege expired.
(e) Called for redemption March 1, 1931.
(f) Now secured by mortgage.

*Decreases in italics.

P. 27:
[fol. 3713] Plant Investment

Year	Total at End of Year	Increase Over Previous Year
1915	$880,068,520	$32,863,717
1916	946,293,348	66,224,728
1917	1,064,892,710	118,599,462
1918	1,142,498,152	77,605,442
1919	1,215,944,184	73,446,032
1920	1,363,826,327	147,882,143
1921	1,543,865,545	180,039,218
1922	1,729,219,520	185,353,975
1923	1,978,947,543	249,728,023
1924	2,266,923,466	287,975,923
1925	2,524,905,590	257,982,124
1926	2,783,023,059	258,117,469
1927	3,013,985,120	230,962,061
1928	3,275,686,848	261,701,728
1929	3,671,099,689	395,412,841
1930	4,043,421,739	372,322,050

[fol. 3714] Extracts from Exhibit Deposition Exhibit # 50-A

Annual Report of the Directors of American Telephone and Telegraph Company to the Stockholders for the year ending December 31, 1918

* * * * * * *

P. 24, 25:

Prior to the war demonstrations of the successful operation of our radio telephone system had been made and been reported upon. Immediately at the outbreak of the war we were called upon by the Signal Corps of the Army to advise them as to what could be done in successfully operating wireless telephone systems between an airplane and the ground, and between two airplanes. The fundamental work on radio communication which we had already done enabled us to assure the Signal Corps that we could successfully accomplish the desired result. Similar requests were received from the Navy Department with reference to the equipment of their hydro-aeroplanes for telephone service, and the equipment of submarine chasers with radio telephone service. Instantaneous communication between a number of submarine chasers operating together was an essential feature of some of the most promising methods of submarine location, and this requirement could only be

met by a satisfactory radio telephone system. Building upon our previous fundamental radio work, we were enabled within nine months from the starting of the work to complete the development work, and to arrange for quantity production of the radio telephone equipment desired for both airplanes and submarine chasers. This achievement was due to the skill of our engineers, and would have been impossible without it. We were enabled to accomplish within a few months, important results which had been [fol. 3715] needed since the beginning of the war, but which had not been obtained either by our Allies or our enemies.

While most of our radio efforts were directed to telephony, we were called upon by both the Army and the Navy for considerable assistance in the production of radio telegraph equipment, especially apparatus for the reception and amplification of signals, and the development of small portable sets for field use.

* * * * * * *

P. 28, 29:

Heretofore, the best telephone methods known to the art provided only one telephone conversation at a time over a single pair of wires. A number of years ago we developed the "phantom circuit" arrangement by means of which three telephone circuits are obtained from two pairs of wires, an important improvement of which we have made extensive use. Now by our new multiplex method, we are enabled to obtain five telephone circuits over one pair of wires, that is, ten simultaneous telephone conversations from the two pairs of wires which formerly could be used for only three simultaneous telephone conversations. This represents an increase of more than threefold in the telephonic capacity of the wires, as compared with the best previous state of the art, and a fivefold increase under conditions where the "phantom circuit" is not employed.

In telegraphy as well as in telephony, sensational results have been attained by the new system. By combining two telegraph wires into a metallic circuit of the type used for telephone working and by applying our new apparatus and methods to this metallic circuit, we have enormously increased the capacity of the wires for telegraph messages. As applied to high speed printer systems we can do eight times as much as is now done, and as compared with the

[fol. 2716] ordinary duplex telegraph circuit in general use we can do ten times as much. These increased results are attained without in any way impairing the quality of telegraph working.

The nature of these developments is such that if desired wires may be used partly for telephone and partly for telegraph. A pair of wires is available either for five simultaneous telephone conversations or for forty simultaneous telegraph messages, or partly for one and partly for the other.

From the nature of the apparatus and methods employed, the system is not practically advantageous on short lines, either telephone or telegraph. On long lines its application will be extended immediately, but its introduction must necessarily be gradual on account of the nature of the apparatus required, and the rearrangement and adaptation of the lines themselves, and their associated apparatus to the new methods of working. Our studies show, however, that this system of multiplex telephony and telegraphy will have great usefulness on long open wire lines. It is not too much to characterize this new system as marking an epoch in the development of long distance telephone and telegraphy.

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P. 41:

The extraordinary rapidity of the increase in wages and in cost of material, as noted elsewhere, could not be met by the economies in operation. To provide revenue against them a campaign of readjustment of rates had been started during 1917 which was well under way when the properties were taken over. In some cases, rates had been increased and put in effect, in some authorized, and in some favorably considered, while others were under consideration—the total increase deemed necessary to meet the abnormal increase in expenses being something under 10 per cent. The necessity of continuing this campaign and its effect upon our estimates was fully set forth and included in our estimates for the last five months of 1918 and for the year 1919, of which the experts in economics made studies and analyses and submitted them to the Postmaster General.

[fol. 3717] EXTRACTS FROM EXHIBIT DEPOSITION EX. 50-B

Annual Report of the Directors of American Telephone and Telegraph Company to the Stockholders for the year ending December 31, 1919

P. 17:

Toll Cables.—During 1919 the extension of the toll cable system from Philadelphia to Harrisburg was completed. Taken in combination with the cables already working between Boston and Washington, this gives a through toll cable route from the important points on the eastern seaboard to as far west as Harrisburg.

P. 24:

Cables in long-distance lines have always greatly limited the distance through which speech may be transmitted, but as the increase in the number of long-distance wires has made necessary the employment of increased lengths of long-distance cable, the technical difficulties presented in the transmission of speech through such circuits have seemed at times to be almost insurmountable.

P. 26:

It has been necessary not only to produce apparatus which would operate efficiently and economically, but also to perfect all of the details necessary to make this entirely new apparatus function properly in relation to the existing apparatus, the present buildings, the practice of the public, etc. That is, after its completion as an efficient mechanism it was necessary to make all of the adaptations so that its introduction would be economical and without disturbances to the public. This has been accomplished.

P. 40:

[fol. 3718] Bell Telephone System in United States

Statement of Revenues and Expenses August 1, 1919, to December 31, 1919 (Duplications Excluded)

	Five months ending December 31, 1919
Exchange Revenues	$112,429,046
Toll Revenues	53,473,831
Miscellaneous Revenues	2,067,035
Total Operating Revenues	$167,969,912
Depreciation	$27,306,134
Current Maintenance	25,420,188
Traffic Expenses	48,462,131
Commercial Expenses	15,820,469
General and Miscellaneous Expenses	7,101,306
Total Operating Expenses	$124,110,228
Net Operating Revenues	43,859,684
Uncollectible Revenues	518,044
Taxes	10,471,628
Operating Income	$32,870,012
Non-operating Revenues—Net	4,978,488
Total Gross Income	$37,848,500
Rent and Miscellaneous Deductions	2,112,944
Interest Deductions	12,182,817
Total Deductions	$14,295,761
Balance Net Income	23,552,739
Deduct Dividends	16,583,542
Surplus Earnings	$6,969,197

P. 41:

[fol. 3719] Bell Telephone System in United States

Combined Balance Sheets 1918 and 1919 (Duplications Excluded)

	Dec. 31, 1918	Dec. 31, 1919
Assets:		
Telephone Plant	$1,142,498,152	$1,215,944,184
Supplies, Tools, etc.		38,035,034
Receivables	122,953,290	84,409,519
Cash		72,879,842
Stocks and Bonds	115,054,876	118,806,351
Total	$1,380,506,318	$1,530,074,930
Liabilities:		
Capital Stock	513,017,040	512,121,868
Funded Debts	430,992,459	546,202,760
Bills Payable	47,064,765	1,774,207
Accounts Payable	38,196,095	72,158,014
Total outstanding obligations	$1,029,270,359	$1,132,256,849
Employees' Benefit Fund	9,244,000	9,244,081
Surplus and Reserves	341,991,959	388,574,000
	$1,380,506,318	$1,530,074,930

P. 63:

[fol. 3720] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1918 and 1919

	1918	1919
Earnings (See Note):		
Dividends	$19,527,451.00	$16,461,674.20
Interest and other Revenues	18,022,220.18	19,953,436.96
Telephone Traffic (Net)	4,726,095.86	5,955,048.13
Compensation—Account Govt. Contract	18,780,395.66	28,132,522.89
Total	$61,056,162.70	$70,502,682.19
Expenses	6,763,145.98	10,259,294.65
Net Earnings	$54,293,016.72	$60,243,387.53
Deduct Interest	10,391,694.89	15,847,596.26
Balance	$43,901,321.83	$44,395,791.27
Deduct Dividends	35,229,698.96	35,356,334.46
Balance	$8,671,622.87	$9,039,456.81
Carried to Reserves	$5,000,000.00	$5,000,000.00
Carried to Surplus	3,671,622.87	4,039,456.81
Total	$8,671,622.87	$9,039,456.81

NOTE—Comparison of detailed items of earnings for 1918 and 1919 is not significant, as explained on page 45 of this report.

P. 65:

[fol. 3721] Liabilities

	Dec. 31, 1918	Dec. 31, 1919
Capital Stock	$441,947,100.00	$441,981,200.00
Capital Stock Installments	238.00	
4% Collateral Trust Bonds, 1929	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds, 1946	78,333,900.00	77,434,900.00
5% Western T. and T. Co. Bonds 1932	9,985,000.00	9,985,000.00
4% Convertible Bonds. 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, 1933	13,073,500.00	13,027,500.00
6% Convertible Bonds, 1925	48,353,624.00	48,367,200.00
6% 3-Year Gold Notes, 1922		50,000,000.00
6% 5-Year Gold Notes, 1924		40,000,000.00
Notes Payable to Bankers	4,000,000.00	
Dividend Payable January 15th	8,838,942.00	8,839,612.00
Interest and Taxes Accrued not Due	4,775,914.15	6,408,390.08
Current Accounts Payable:		
Compensation Due Associated companies when collected from United States Government		7,858,620.83
Other Current Accounts Payable	1,944,742.06	6,363,800.72
Employees' Benefit Fund	2,000,000.00	2,000,000.00
Reserve for Depreciation and Contingencies	43,900,076.83	47,262,123.43
Surplus (Including Capital Stock Premiums and excluding Debt Discount and Expense)	83,414,697.43	86,663,741.54
	$821,156,734.47	$926,781,088.60

NOTE—Associated and other Bell System Companies' notes endorsed by this Company (amounting to $53,900,000 on December 31, 1918, and to $9,303,000 on December 31, 1919) are not included in either Assets or Liabilities.

[fol. 3722] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #54

Bell Telephone System in United States, Condensed Summary of Reports for December, 1919.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and liabilities:

		(a) At end of month
1	Intangible Capital	27,996,804
2	Physical Property	1,253,979,218
3	Investments	118,265,075
4	Cash and Deposits	72,879,842
5	Receivables, etc.	102,055,043
6	Total Assets	1,575,175,982

7	Capital Stock	512,121,868
8	Funded Debt	546,202,760
9	Advances from System Corporations	0
10	Bills payable	1,774,207
11	Other Payables, etc.	82,243,425
12	Reserves for Depreciation	276,304,281
13	Surplus	*156,529,441
14	Total Liabilities	1,575,175,982

[fol. 3723]

		g 12 Mos. this year
23	Net Telephone Earnings	63,944,105
24	Sundry Net Earnings	12,422,992
25	Total Net Earnings	76,367,097
26	Deduct Interest	27,745,830
27	Balance Net Profits	48,621,267
28	Deduct Dividends (Paid and Accrued)	39,839,927
29	Undivided Profits	8,781,340
30	Annual Dividend Rate a) 7.8% Total Plant per Station:	
	At end of Month	158.18
	At Dec. 31 last	159.82

	Averages:	l 12 Mos. this year
31	Average Plant in Service	1,157,816,000
32	Average Number of Company Stations	7,413,786
33	Average Capital Obligations	1,026,948,600
34	Average Capital Stock	512,527,100
35	Av. Mo. Tel. Rev. per Station—Gross	4,218
36	—Net	719

	Percentages (Annual Basis):	q 12 Mos. This Year	
		Rep.	Adj.
37	Total Telephone Revenues to Average Plant in Service	32.4	32.4%
38	Operation Expenses to Telephone Revenues	44.3	44.3%
39	Telephone Expenses to Telephone Revenues	83.0	82.7%
40	Current Maintenance to Average Plant in Service	4.9	4.9%
41	Depreciation to Average Plant in Service (includes 261)	5.6	5.5%
42	Net Telephone Earnings to Average Plant in Service	5.5	5.6%
43	Total Net Earnings to Average Capital Obligations	7.4	7.5%
44	Balance Net Profits to Average Capital Stock	9.5	9.7%

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*Includes $9,483,715 the difference between (a) Telephone Earnings from Property and (b) Compensation during Federal Control plus interest from August 1, 1919, resulting in corresponding increase in Surplus.

a) Dividends paid to Average Capital Stock for Year 1919. CR 51.

[fol. 3724] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #55

Bell Telephone System in United States Condensed Summary of Reports for December, 1920

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and liabilities:

		(a) At end of month
1	Intangible Capital	27,919,601
2	Physical Property	1,411,268,370
3	Investments	114,712,783
4	Cash and Deposits	41,399,285
5	Receivables, etc.	85,076,542
6	Total Assets	1,680,376,581
7	Capital Stock	511,493,407
8	Funded Debt	585,794,075
9	Advances from System Corporations	0
10	Bills Payable	10,130,141
11	Other Payables, etc.	83,674,581
12	Reserves for Depreciation	309,556,404
13	Surplus	179,727,973
14	Total Liabilities	1,680,376,581

[fol. 3725]

		(g) 12 Mos. this Year
23	Net Telephone Earnings	65,778,036
24	Sundry Net Earnings	13,731,132
25	Total Net Earnings	79,509,168
26	Deduct Interest	31,724,103
27	Balance Net Profits	47,785,065
28	Deduct Dividends (Paid and Accrued)	39,999,579
29	Undivided Profits	*7,785,486
30	Annual Dividend Rate 7.8 (a)% Total Plant per Station:	
	At end of Month	164.76
	At Dec. 31 last	158.18

		l 12 Mos. This Year
	Averages:	
31	Average Plant in Service	1,253,028,200
32	Average Number of Company Stations	8,000,447
33	Average Capital Obligations	1,076,204,000
34	Average Capital Stock	511,585,400
35	Av. Mo. Tel. Rev. per Station—Gross	4,629
36	—Net	685

		q 12 Mos. This Year
	Percentages (Annual Basis):	
37	Total Telephone Revenues to Average Plant in Service	35.5%
38	Operation Expenses to Telephone Revenues	48.3%
39	Telephone Expenses to Telephone Revenues	85.2%
40	Current Maintenance to Average Plant in Service	5.6%
41	Depreciation to Average Plant in Service (includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	5.2%
43	Total Net Earnings to Average Capital Obligations	7.4%
44	Balance Net Profits to Average Capital Stock	9.3%

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(a) Dividends paid to Average Capital Stock for year 1920.
(*) Includes revenues held in reserve pending rate decisions as follows:

	Month	Period
Central Union Tel. Co	$6,725	$71,841
Southwestern Bell Tel. Co	20,031	241,422
Mountain States T. and T. Co	0	135,000
	$26,756	$448,263

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[fol. 3726] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #56

Bell Telephone System in United States Condensed Summary of Reports for December, 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:

		(a) At end of month
1	Intangible Capital	24,740,742
2	Physical Property	1,591,809,980
3	Investments	140,177,833
4	Cash and Deposits	87,937,784
5	Receivables, etc.	96,233,829
6	Total Assets	1,940,900,168
7	Capital Stock	632,216,253
8	Funded Debt	666,740,590
9	Advances from System Corporations	0
10	Bills Payable	2,369,665
11	Other Payables, etc.	95,958,182
12	Reserves for Depreciation	350,642,044
13	Surplus	192,973,434
14	Total Liabilities	1,940,900,168

[fol. 3727]

		g 12 Mos. This Year
23	Net Telephone Earnings	88,429,768
24	Sundry Net Earnings	15,768,913
25	Total Net Earnings	104,198,681
26	Deduct Interest	36,773,998
27	Balance Net Profits	67,424,683
28	Deduct Dividends (Paid and Accrued)	47,848,394
29	Undivided Profits	*19,576,289
30	Annual Dividend Rate (a) 8.6% Total Plant per Station:	
	At end of Month	174.32
	At Dec. 31 last	164.76

	Averages:	l 12 Mos. This Year
31	Average Plant in Service	1,392,224,300
32	Average Number of Company Stations	8,551,829
33	Average Capital Obligations	*1,187,959,900
34	Average Capital Stock	†554,625,700
35	Av. Mo. Tel. Rev. per Station—Gross	4,783
36	—Net	862

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.3%
38	Operation Expenses to Telephone Revenues	45.5%

39	Telephone Expenses to Telephone Revenues	82.0%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant In Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	6.4%
43	Total Net Earnings to Average Capital Obligations	8.8%
44	Balance Net Profits to Average Capital Stock	12.2%

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(a) Rate per annum of Dividends paid for 12 months to Average Capital Stock.
* Includes revenues held in reserve pending rate decisions as follows:

Southwestern Bel. Tel. Co.	$293,429
Ohio Bell Tel. Co.	155,750
Total	$449,179

‡ Includes Capital Stock Installments.
† Excludes " " "

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[fol. 3728] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #57

Bell Telephone System in United States Condensed Summary of Reports for December, 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of month
1	Intangible Capital	24,625,479
2	Physical Property	1,779,963,720
3	Investments	216,407,380
4	Cash and Deposits	77,290,044
5	Receivables, etc.	105,177,825
6	Total Assets	2,203,464,448
7	Capital Stock	837,007,344
8	Funded Debt	646,033,165
9	Advances from System Corporation	0
10	Bills Payable	426,164
11	Other Payables, etc.	116,390,407
12	Reserves for Depreciation	395,297,455
13	Surplus	208,309,913
14	Total Liabilities	2,203,464,448

[fol. 3729]

		g. 12 Mos. this Year.
23	Net Telephone Earnings	104,920,828
24	Sundry Net Earnings	19,571,290
25	Total Net Earnings	124,492,118
26	Deduct Interest	37,869,366
27	Balance Net Profits	86,622,752
28	Deduct Dividends (Paid and Accrued)	60,305,204
29	Undivided Profits	*26,317,548
30	Annual Dividend Rate a) 8.8% Total Plant per Station At end of Month	182.77
	At Dec. 31 last	174.32

	Averages.	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,558,206,200
32	Average Number of Company Stations	9,132,746
33	Average Capital Obligations	1,371,280,400
34	Average Capital Stock	687,012,000
35	Av. Mo. Tel. Rev. per Station—Gross	4,919
36	—Net	957

	Percentages. (Annual Basis)	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	34.6%
38	Operation Expenses to Telephone Revenues	43.1%
39	Telephone Expenses to Telephone Revenues	80.5%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	6.7%
43	Total Net Earnings to Average Capital Obligations	9.1%
44	Balance Net Profits to Average Capital Stock	12.6%

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(a) Rate per annum of Dividends paid for year 1922 to Average Capital Stock.

* Includes revenues held in reserve pending rate decisions as follows:

Michigan State Tel. Co.	$629,329
Ohio Bell Telephone Company	155,197
Southern Bell Tel. and Tel. Co.	167,203
Cumberland Tel. and Tel. Co.	411,000
Southwestern Bell Tel. Co.	335,877
	$1,698,606

‡ Includes Capital Stock Installments.

† Excludes Capital Stock Installments.

[fol. 3730] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #58

Bell Telephone System in United States

Condensed Summary of Reports for December 1923

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:	(a) At end of month
1 Intangible Capital	25,640,294
2 Physical Property	2,038,708,888
3 Investments	194,354,224
4 Cash and Deposits	78,895,327
5 Receivables, etc.	106,387,393
6 Total Assets	2,443,986,126
7 Capital Stock	891,534,567
8 Funded Debt	752,660,534
9 Advances from System Corporations	0
10 Bills Payable	248,294
11 Other Payables, etc.	134,351,642
12 Reserves for Depreciation	443,130,438
13 Surplus	222,060,651
14 Total Liabilities	2,443,986,126

[fol. 3731]

	g. 12 Mos. This Year.
23 Net Telephone Earnings	113,381,052
24 Sundry Net Earnings	23,994,867
25 Total Net Earnings	137,375,919
26 Deduct Interest	37,751,447
27 Balance Net Profits	99,624,472
28 Deduct Dividends (Paid and Accrued)	72,428,617
29 Undivided Profits	27,195,855
30 Annual Div. Rate-Com. a) 8.7% Pref. a) 6.7% Total Plant per Station End of Month	191.16
b Dec. 31 last	182.77

	Averages.	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l† Equipment)	1,759,186,100
32	Average Number of Company Stations	9,919,378
33	Average Capital Obligations	1,554,794,400
34	Average Capital Stock (Common)	781,099,600
35	Av. Mo. Tel. Rev. per Station—Gross	4,974
36	—Net	953

	Percentages. (Annual Basis):	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	33.7%
38	Operation Expenses to Telephone Revenues	42.8%
39	Telephone Expenses to Telephone Revenues	80.8%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (Includes 261)	5.0%
42	Net Telephone Earnings to Average Plant in Service	6.4%
43	Total Net Earnings to Average Capital Obligations	8.8%
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	12.2%

* * * * * * *

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Capital Stock	a At end of month	b Increase over last month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Common	816,596,020	2,914,262	39,976,423	5.1
Preferred	74,938,547	512,100	14,550,800	24.1

* Deduct Dividends (Paid and Accrued)

	e This Month.	f Increase over last Month	g. 12 Mos. this Year	h Increase over same Period last Year	i % Increase
Common	5,891,374	11,191	67,761,113	10,333,625	18.0
Preferred	416,090	3,047	4,667,504	1,789,788	62.2

(a) Rate per annum of Dividends paid for year 1923 to Average Common and Preferred Capital Stock.

† Includes revenues held in reserve pending rate decisions as follows:

[fol. 3732]

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Southern Bell Tel. and Tel. Co.	$238,919
Cumberland Tel. and Tel. Co.	178,000
Ohio Bell Telephone Company	22,705
Michigan State Telephone Company	1,337,219
Indiana Bell Telephone Company	200,000

Illinois Bell Telephone Company	460,298
Southwestern Bell Tel. Co.	127,698
	2,564,893
American Tel. and Tel. Co.-General Reserve for Contingencies	3,000,000
Transferred to Employees' Benefit Fund—	
Southern New England Tel. Co.	100,000
Southwestern Bell Tel. Co.	292,500
	$5,957,339

† Includes Capital Stock Installments,
‡ Excludes Capital Stock Installments

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[fol. 3733] Extracts from Exhibit Deposition Exhibit #59

Bell Telephone System in United States

Condensed Summary of Reports for December 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:

		(a) At end of month
1	Intangible Capital	25,866,192
2	Physical Property	2,330,371,919
3	Investments	197,982,036
4	Cash and Deposits	48,608,738
5	Receivables, etc.	109,458,177
6	Total Assets	2,712,287,062
7	Capital Stock	1,093,572,862
8	Funded Debt	752,732,597
9	Advances from System Corporations	0
10	Bills Payable	365,318
11	Other Payables, etc.	139,170,459
12	Reserves for Depreciation	485,662,088
13	Surplus	240,783,738
14	Total Liabilities	2,712,287,062

[fol. 3734]

		g 12 Mos. This Year
24	Net Telephone Earnings	127,923,874
25	Sundry Net Earnings	20,852,745
26	Total	148,776,619
27	Deduct Interest	41,531,071
28	Balance Net Profits	107,245,548
29	Deduct Dividends (Paid and Accrued)*	82,602,906
30	Undivided Profits	**24,642,642
31	Annual Div. Rate-Com. a) 8.8% Pref. a) 7.7% Total Plant per Station End of Month	202.68
	Dec. 31 last	191.16

	Averages:	l 12 Mos. This Year
32	Average Plant in Service (Excludes Gen'l Equipment)	2,026,402,600
33	Average Number of Company Stations	10,760,436
34	Average Capital Obligations	†1,745,264,500
35	Average Capital Stock (Common)	‡868,575,900
36	Av. Mo. Tel. Rev. per Station—Gross	5,091
37	—Net	991

	Percentages. (Annual Basis):	q 12 Mos. This Year
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	32.0%
39	Operation Expenses to Telephone Revenues	42.1%
40	Telephone Expenses to Telephone Revenues	80.5%
41	Current Maintenance to Average Plant in Service	5.1%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
43	Net Telephone Earnings to Average Plant in Service	6.3%
44	Total Net Earnings to Average Capital Obligations	8.5%
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	11.6%

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Capital Stock	*a* At end of Month	*b* Increase over last Month	*c* Increase over Dec. 31 last	*d* % Increase over Dec. 31
Common	989,539,915	10,176,652	172,943,895	21.2
Preferred	104,032,947	236,800	29,094,400	38.8

* Deduct Dividends (Paid and Accrued)

	e This Month	f Increase over last Month	g 12 Mos. This Year	h Incr. over same Period Last Year	i % Increase
Common	6,789,669	34,303	76,150,687	8,389,574	12.4
Preferred	570,809	***925	6,452,219	1,784,715	38.2

*** Figures in Red.

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(a) Rate per annum of Dividends paid for year 1924 to Average Common and Preferred Capital Stock.

** Includes revenues held in reserve pending rate decisions as follows:

[fol. 3735] Illinois Bell Tel. Co.	$1,788,585
Transferred to Reserve for Contingencies A. T. and T. Co.-General	3,000,000
Transferred to Employees' Benefit Fund—	
Southern New England Tel. Co.	100,000
Ches. and Pot. Tel. Co.	107,049
Cinn. and Subn. Bell Tel. Co.	150,000
Wisconsin Tel. Co.	189,070
Southwestern Bell Tel. Co.	593,550
	1,139,669
	$5,928,254

† Includes Capital Stock Installments.

‡ Excludes Capital Stock Installments.

[fol. 3736] Extracts from Exhibit Deposition Exhibit #60

Bell Telephone System in United States

Condensed Summary of Reports for December 1925.

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	15,851,866
2	Physical Property	2,594,240,197
3	Investments	186,624,812
4	Cash and Deposits	50,037,040
5	Receivables, etc.	128,541,430
6	Total Assets	2,975,295,345
7	Capital Stock	1,144,618,690
8	Funded Debt	890,336,995
9	Advances from System Corporations	0
10	Bills Payable	672,000
11	Other Payables, etc.	154,355,688
12	Reserves for Depreciation	530,071,026
13	Surplus	255,240,946
41	Total Liabilities	2,975,295,345

	Earnings and Expenses:	g 12 Mos. This Year.
24	Net Telephone Earnings	162,365,898
25	Sundry Net Earnings	20,077,697
26	Total Net Earnings	182,443,595
27	Deduct Interest	45,940,664
28	Balance Net Profits	136,502,931
29	Deduct (Paid &)—Preferred	6,961,574
30	Dividends (Accrued)—Common	86,281,083
31	Total Dividends	93,242,657
32	Undivided Profits	43,260,274
33	Annual Div. Rate-Com. (a) 8.7% Pref. (a) 6.6% Total Plant per Station	
	End of Month	210.86
	Dec. 31 last	202.68

	Averages (Excludes Gen'l Equipment)	l 12 Mos. This Year
34	Average Plant in Service	2,321,767,400
35	Average Number of Company Stations	11,556,479
36	Average Capital Obligations	*1,963,186,300
37	Average Capital Stock (Common)	*986,418,000
38	Av. Mo. Tel. Rev. per Station—Gross	5,345
39	—Net	1,171

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir) to Av. Plant in Service	31.5%
41	Operations Expenses to Telephone Revenues	39.5%
42	Telephone Expenses to Telephone Revenues	78.1%
43	Current Maintenance to Average Plant in Service	4.8%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix)	5.0%
45	Net Telephone Earnings to Average Plant in Service	7.0%
46	Total Net Earnings to Average Capital Obligations	9.3%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	13.1%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3737]

Capital Stock	(a) At end of Month	(b) Increase over Last Month	(c) Increase over Dec. 31 Last	(d) % Increase over Dec. 31
Preferred	105,802,147	21,400	1,769,200	1.7
Common	1,011,060,343	11,304,250	50,386,700	5.2
Installments	27,756,200	1,130,574	***1,110,072	***3.8
Total Capital Stock	1,144,618,690	12,456,224	51,045,828	4.7

(a) Rate per annum of Dividends paid for year 1925 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

% Excludes Capital Stock Installments.

° Connecting Company stations have been adjusted for natural growth.

*** Red figures.

[fol. 3738] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #61

Bell Telephone System in United States

Condensed Summary of Reports for December, 1926

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities	(a) At End of Month
1	Intangible Capital	17,407,344
2	Physical Property	2,856,864,725
3	Investments	148,306,145
4	Cash and Deposits and Temporary Investments	139,912,661
5	Receivables, etc	135,309,492
6	Total Assets	3,297,800,367
7	Capital Stock	1,312,881,184
8	Funded Debt	921,523,000
9	Advances from System Corporations	0
10	Bills Payable	863,075
11	Other Payables, etc	181,558,793
12	Reserves for Depreciation	576,215,584
13	Surplus	304,758,731
14	Total Liabilities	3,297,800,367

[fol. 3739]

		g. 12 Mos. This Year
24	Net Telephone Earnings	183,254,108
25	Sundry Net Earnings	21,616,241
26	Total Net Earnings	204,870,349
27	Deduct Interest	49,809,330
28	Balance Net Profits	155,061,019
29	Deduct (Paid &)—Preferred	7,176,721
30	Dividends (Accrued)—Common	93,437,716
31	Total Dividends	100,614,437
32	Undivided Profits	54,446,582
33	Annual Div. Rate-Com. (a) 8.8%; Pref. (a) 6.6%; Total Plant per Station—End of Month	218.27
	Dec. 31 last	210.86

	Averages:	l. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,589,184,700
35	Average Number of Company Stations	12,356,053
36	Average Capital Obligations	*2,127,407,200
37	Average Capital Stock (Common)	*1,066,139,800
38	Av. Mo. Tel. Rev. per Station—Gross	5,552
39	—Net	1,236

	Percentages (Annual Basis)	q. 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.3%
41	Operation Expenses to Telephone Revenues	38.4%
42	Telephone Expenses to Telephone Revenues	77.7%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	7.1%
46	Total Net Earnings to Average Capital Obligations	9.6%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	13.9%

[fol. 3740]

Dec. 1926.

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	109,659,847	60,200	3,857,700	3.6
Common	1,154,043,093	6,908,650	142,982,750	14.1
Installments	49,178,244	2,479,477	21,422,044	77.2
Total Capital Stock	1,312,881,184	9,448,327	168,262,494	14.7

(a) Rate per annum of Dividends paid for year 1926 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

* Excludes Capital Stock Installments.

[fol. 3741] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #62

Bell Telephone System in United States

Condensed Summary of Reports for December, 1927

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities	(a) At End of Month
1	Intangible Capital	17,299,810
2	Physical Property	3,090,380,360
3	Investments	149,306,331
4	Cash and Deposits and Temporary Investments	102,604,821
5	Receivables, etc	137,867,160
6	Total Assets	3,497,458,482
7	Capital Stock	1,351,939,840
8	Funded Debt	919,789,700
9	Advances from System Corporations	0
10	Bills Payable	7,046,158
11	Other Payables, etc	189,986,484
12	Reserves for Depreciation	600,663,640
13	Surplus	428,032,660
14	Total Liabilities	3,497,458,482

[fol. 3742]

		g. 12 Mos. This Year
24	Net Telephone Earnings	194,461,151
25	Sundry Net Earnings	22,109,449
26	Total Net Earnings	216,570,600
27	Deduct Interest	50,511,448
28	Balance Net Profits	166,059,152
	Deduct Dividends (Paid & Accrued):	
29	Preferred	7,306,264
30	Common	105,094,861
31	Total Dividends	112,401,125
32	Undivided Profits	53,658,027
33	Annual Div. Rate-Com. (a) 8.8% Pref. (a) 6.6%	
	Total Plant per Station End of Month	220.82
	Dec. 31 Last	216.57

		l. 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	2,847,490,500
35	Average Number of Company Stations	13,265,762
36	Average Capital Obligations	2,257,991,400
37	Average Capital Stock (Common)	1,188,151,500
38	Av. Mo. Tel. Rev. per Station—Gross	5,620
39	—Net	1,222

		q. 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (except Adv. & Dir.) to Av. Plant in Service	30.9%
41	Operation Expenses to Telephone Revenues	38.2%
42	Telephone Expenses to Telephone Revenues	78.3%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	6.8%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	13.4%

[fol. 3743]

CR 51 Dec. 1927

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	110,602,947	10,000	943,100	.9
Common	1,202,440,393	903,300	48,397,300	4.2
Installments	38,896,500	1,317,616	10,281,744**	20.9**
Total Capiral Stock	1,351,939,840	2,230,916	39,058,656	3.0

(a) Rate per annum of Dividends paid for year 1927 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
% Excludes Capital Stock Installments.
** Red Figures.

[fol. 3744] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT % 63 CR 51

Bell Telephone System in United States

Condensed Summary of Reports for December, 1928

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	16,378,827
2	Physical Property	3,363,561,471
3	Investments	164,539,174
4	Cash and Deposits and Temporary Investments	173,038,949
5	Receivables, etc	147,163,994
6	Total Assets	3,864,682,415
7	Capital Stock	1,564,644,118
8	Funded Debt	912,126,470
9	Advances from System Corporations	0
10	Bills Payable	53,034,930
11	Other Payables, etc	180,032,244
12	Reserves for Depreciation	650,621,336
13	Surplus	504,223,317
14	Total Liabilities	3,864,682,415

[fol. 3745]

		g. 12 Mos. This Year
24	Net Telephone Earnings	214,829,243
25	Sundry Net Earnings	27,893,191
26	Total Net Earnings	242,722,434
27	Deduct Interest	51,634,795
28	Balance Net Profits	191,087,639
29	Deduct Dividends	
	Dividends (Paid & Accrued)	
29	Preferrred	7,322,256
30	Common	112,026,356
31	Total Dividends	119,348,612
32	*Undivided Profits*	71,739,027
33	Annual Div. Rate: Com. (a) 8.7%; Pref. (a) 6.6%; Total	
	Plant per Station End of Month	226.85
	Dec. 31 last	220.82

	Averages:	l. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3070,917,209
35	Average Number of Company Stations	14,010,957
36	Average Capital Obligations	2371,779,400
37	Average Capital Stock (Common)	1281,817,200
38	Av. Mo. Tel. Rev. per Station—Gross	5,802
39	—Net	1,278

	Percentages (Annual Basis):	q. 12 mos. This Year
40	Total Tel. Rev (Except Adv. & Dir to Av. Plant in service	31.2%
41	Operation Expenses to Telephone Revenues	37.9%
42	Telephone Expenses to Telephone Revenues	78.0%
43	Current Maintenance to Average Plant in Service	5.0%
44	Depreciation to Average Plant in Service (Incl. Office Furn. & Fix)	5.0%
45	Net Telephone Earnings to Average Plant in Service	7.0%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	14.3%

[fol. 3746]

CR 51 Dec 1928

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	$110,815,347	4,000	212,400	2
Common	1,395,952,193	8,215,200	193,511,800	16.1
Installments	57,876,578	5,448,478	18,980,078	48.8
Total Capital Stock	1,564,644,118	13,667,678	212,704,278	15.7

(a) Rate per annum of Dividends paid for year 1928 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
# Excludes Capital Stock Installments.

[fol. 3747]

CR 51

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #64

Bell Telephone System in United States

Condensed Summary of Reports for December 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	15,198,389
2	Physical Property	3,781,974,077
3	Investments	216,022,944
4	Cash and Deposits and Temporary Investments	70,861,768
5	Receivables, etc.	180,270,159
6	Total Assets	4,264,327,337
7	Capital Stock	1,611,862,252
8	Funded Debt	1,081,602,609
9	Advances from System Corporations	0
10	Bills Payable	67,490,275
11	Other Payables, etc.	211,955,681
12	Reserves for Depreciation	699,034,674
13	Surplus	592,381,846
14	Total Liabilities	4,264,327,337

[fol. 3748]

		I. 12 Mos. This Year
24	Net Telephone Earnings	232,336,762
25	Sundry Net Earnings	44,349,902
26	Total Net Earnings	276,686,664
27	Deduct Interest	59,581,792
28	Balance Net Profits	217,104,872
	Deduct Dividends (Paid & Accrued)	
29	Preferred	7,326,523
30	Common	124,897,312
31	Total Dividends	132,223,835
32	Undivided Profits	84,881,037
33	Annual Div. Rate: Com. (a), 8.8%; Pref. (a), 6.6%; Total Plant per Station:	
	End of Month	239.69
	Dec. 31 Last	226.85

	Averages:	I. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3,367,858,900
35	Average Number of Company Stations	14,892,252
36	Average Capital Obligations	2,629,504,000
37	Average Capital Stock (Common)	1,416,296,900
38	Av. Mo. Tel. Rev. per Station—Gross	5,992
39	—Net	1,300
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.22%
41	Operation Expenses to Telephone Revenues	38.25%
42	Telephone Expenses to Telephone Revenues	78.30%
43	Current Maintenance to Average Plant in Service	5.34%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.87%
45	Net Telephone Earnings to Average Plant in Service	6.90%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	14.81%

[fol. 3749]

CR 51 Dec. 1929

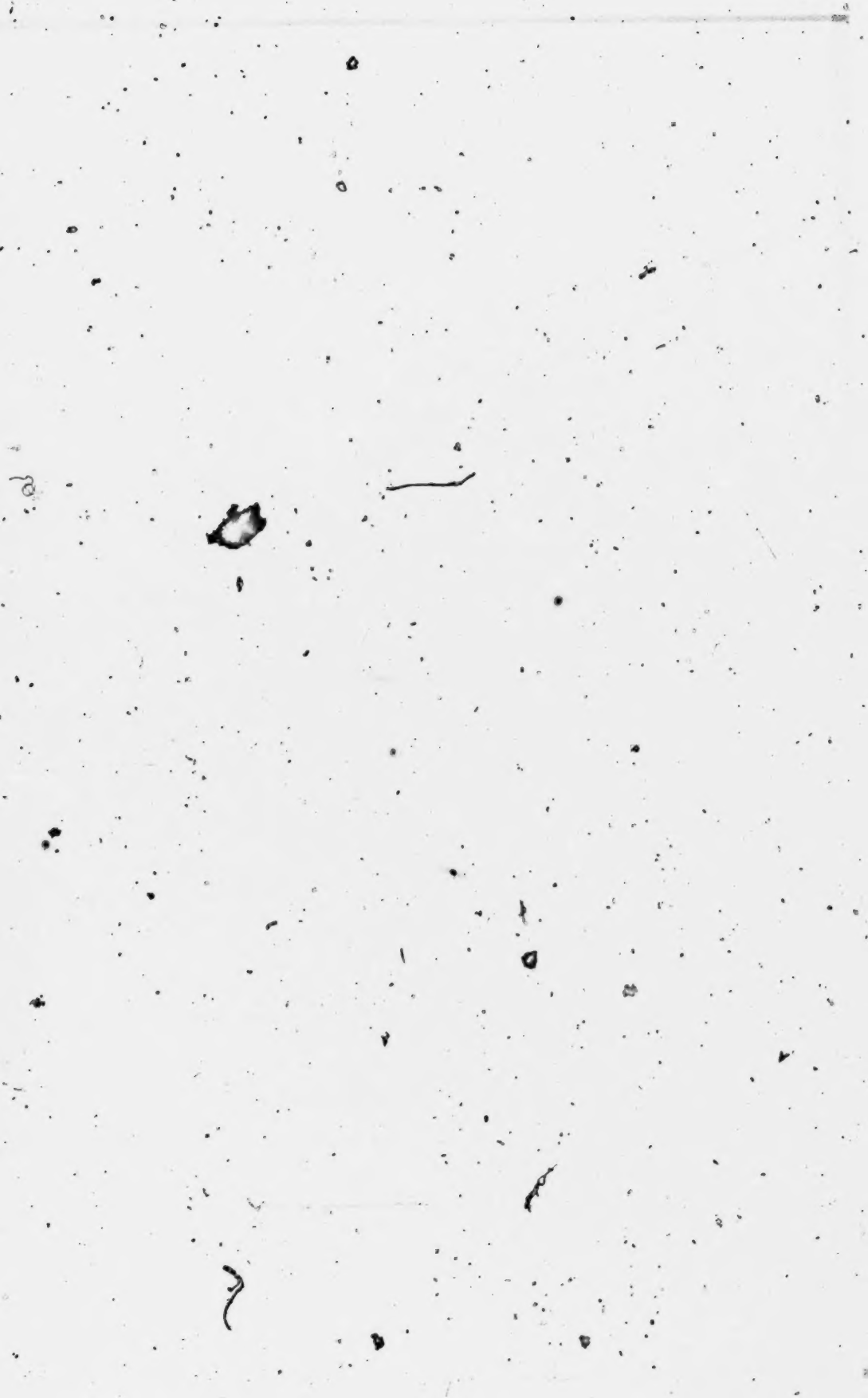
Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	110,824,447	0	9,100	0
Common	1,428,679,743	1,038,400	32,727,550	2.3
Installments	72,358,062	3,602,009	14,481,484	25.0
Total Capital Stock	1,611,862,252	4,640,409	47,218,134	3.0

(a) Rate per annum of Dividends paid for year 1929 to Average Common and Preferred Capital Stock.

¢ Includes Capital Stock Installments.

$ Excludes Capital Stock Installments.

(Here follow side folios 3750, 3751, 3752, and 3753)



Form S. M. 188 L
This Copy for
Mr.

DEFENDANT'S EXHIBIT 65

MONTHLY REPORT No. 1.

BELL TELEPHONE SYSTEM IN UNITED STATES.
Name of Company.

CONDENSED SUMMARY OF REPORTS FOR DECEMBER, 19 30.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	ASSETS AND LIABILITIES.	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31	
1	Intangible Capital	13 325 904				1
2	Physical Property	4 146 149 003	18 213 233	364 174 926	9 6	2
3	Investments	267 437 010		51 414 066	23 8	3
4	Cash and Deposits and Temporary Investments	419 116 174	10 583 437	348 254 406	491 5	4
5	Receivables, etc.	187 831 799		7 561 640	4 2	5
6	Total Assets	5 033 859 890	20 208 320	769 532 553	18 0	6
7	Capital Stock†	2 155 052 726	14 966 849	543 190 474	33 7	7
8	Funded Debt	1 032 563 927				8
9	Advances from System Corporations	0	0	0	0	9
10	Bills Payable	84 003 296	8 138 783	16 513 021	24 5	10
11	Other Payables, etc.	205 187 484	1 278 001			11
12	Reserves for Depreciation	740 005 875		40 971 201	5 9	12
13	Surplus	817 046 582		224 864 736	37 9	13
14	Total Liabilities	5 033 859 890	20 208 320	769 532 553	18 0	14

	EARNINGS AND EXPENSES.	a This Month	b Increase over last Month	c 12 Mos. This Year	d Inc. over same Period last Year	e % Increase	
15	Exchange Revenues	61 742 825	752 514	728 709 193	37 350 267	5 4	15
16	Toll Revenues	28 415 705	1 036 601	348 541 203			16
17	Miscellaneous Operating Revenues	2 123 577		26 689 409	1 539 735	6 1	17
18	Total Telephone Revenues	92 282 107	1 679 709	1103 939 805	33 145 306	3 1	18
19	Operation Expenses	36 228 632	2 097 323	422 882 535	13 295 975	3 2	19
20	Current Maintenance	17 660 368	1 974 200	191 056 987	11 358 039	6 3	20
21	Depreciation	15 977 955	197 744	183 460 996	18 140 677	11 0	21
22	Taxes	6 084 818		86 690 401	2 838 491	3	22
23	Total Telephone Expenses	75 951 773	3 425 669	884 090 919	45 633 182	5 4	23
24	Net Telephone Earnings	16 330 334		219 848 886			24
25	Sundry Net Earnings	4 517 698	491 721	48 025 539	3 675 637	8 3	25
26	Total Net Earnings	20 848 032		267 874 425			26
27	Deduct Interest	5 533 392	124 560	66 228 520	6 646 728	11 3	27
28	Balance Net Profits	15 314 640		201 645 905			28
29	Deduct (Paid & Accrued)—Preferred	602 756		7 318 469			29
30	Dividends (Paid & Accrued)—Common	13 606 324		149 306 673	24 409 261	19 5	30
31	Total Dividends	14 209 080		156 625 142	24 401 307	18 5	31
32	Undivided Profits	1 105 560		45 020 763			32

33 Annual Div. Rate-Com. 8.73 % Pref. 6.61 % Total Plant per Station—End of Month 259.42 Dec. 31 last 259.66

	AVERAGES.	a This Month	b Last Month	c 12 Mos. This Year	d Same Period last Year	e % Increase over	
34	Average Plant in Service (Excludes Gen'l Equipment)	3922 139 300	3899 096 300	3759 797 100	3367 858 900	11 6	34
35	Average Number of Company Stations	15 586 679	15 589 382	15 516 165	14 892 252	4 2	35
36	Average Capital Obligations	3260 348 100	3244 234 600	3055 601 200	2629 504 000	16 2	36
37	Average Capital Stock (Common)	1931 656 100	1927 911 900	1709 668 600	1416 396 900	20 7	37
38	Av. Mo. Tel. Rev. per Station—Gross	5 921	5 812	5 929	5 992		38
39	--Net	1 048	1 160	1 181	1 339		39

	PERCENTAGES. (Annual Basis)	a This Month	b Last Month	c 12 Mos. This Year	d Same Period last Year	
40	Total Tel. Rev. (Except Adv. & Div.) to Av. Plant in Service	27.70 %	27.35 %	25.51 %	31.22 %	40
41	Operation Expenses to Telephone Revenues	39.26 %	37.67 %	38.31 %	35.25 %	41
42	Telephone Expenses to Telephone Revenues	82.30 %	80.05 %	80.09 %	75.30 %	42
43	Current Maintenance to Average Plant in Service	5.40 %	4.83 %	5.08 %	5.34 %	43
44	Depreciation to Average Plant in Service (Int'l Office Plant & Pat.)	4.84 %	4.81 %	4.84 %	4.87 %	44
45	Net Telephone Earnings to Average Plant in Service	5.00 %	5.56 %	5.85 %	6.90 %	45
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.14 %	10.01 %	11.41 %	14.81 %	46

	STATIONS.	a Total at end of Month	b Per 100 Population	c Net Gain this Month	d Net Gain Dec. 31 last	e Per Cent Net Gain Expected	Per Cent Net Gain Realized	
47	Company Stations	15 583 101	12 97		•267 131	3 62	1 74	47
48	Connecting Stations (Incl. Service, Private Line & Subscribers)	4 515 200	xxx xx	2 332		xxx xx		48
49	Total	20 098 301	16 62		1 447	xxx xx		49

Date issued January 30, 1931.
Should be issued not later than [illegible]

† Over

3750

C.R 51
Dec 1930

† Capital Stock	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Preferred	110 347 547			
Common	1 933 242 143	3 168 200	504 562 400	35 3
Installments	~~111 463 036~~	~~13 310 349~~	~~39 104 974~~	~~54 0~~
Total Capital Stock	~~2 155 052 726~~	~~14 966 849~~	~~543 190 474~~	~~33 7~~

a) Rate per annum of Dividends paid for year 1930 to Average Common and Preferred Capital Stock.

† Includes Capital Stock Installments.

Excludes Capital Stock Installments.

• Includes 123.199 stations of Lehigh Tel. Co. and several connecting companies of the Pacific Tel. and Tel. Co. and New England Tel. and Tel. Co. merged in April, June and July.

DEFENDANT'S EXHIBIT 66

FORM B. N. 182 H.
This Copy for
Mr. .....

ASSOCIATED OPERATING COMPANIES — MONTHLY REPORT No. 7

(Excludes American Tel. and Tel. Co., Long Lines.)
Name of Company.

CONDENSED SUMMARY OF REPORTS FOR DECEMBER, 1919

(The figures on this report are arranged for comparison with previous years and are not in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	ASSETS AND LIABILITIES.	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31	
1	Intangible Capital	27 996 804		1 058 683	3 9	1
2	Physical Property	1 147 638 227		66 020 468	6 1	2
3	Investments	52 417 236		7 869 394	17 7	3
4	Cash and Deposits	13 754 648		[redacted]	1[redacted]	4
5	Receivables, etc.	77 316 388		18 620 601	31 7	5
6	**Total Assets**	1 319 123 303		91 633 018	7 5	6
7	Capital Stock	[illegible] 728		[illegible]		7
8	Funded Debt	247 [illegible] 250		26 764 725	12 [illegible]	8
9	Advances from System Corporations	[illegible]		57 [illegible]		9
10	Bills Payable	1 774 207		[redacted]	[redacted]	10
11	Other Payables, etc.	80 421 893		2 964 949	3 8	11
12	Reserves for Depreciation	251 054 173		37 331 995	17 5	12
13	Surplus	57 429 911		5 214 475	10 0	13
14	**Total Liabilities**	1 319 123 303		91 638 018	7 5	14

	EARNINGS AND EXPENSES.	e This Month	f Increase over last Month	g 12 Mos. this Year	h Incr. over same Period last Year	i % Increase	
15	Exchange Revenues			257 524 372	35 482 741	16 0	15
16	Toll Revenues			87 681 921	15 871 546	22 1	16
17	**Total Telephone Revenues**			345 206 293	51 354 287	17 5	17
18	Operation Expenses			167 300 690	29 016 765	21 0	18
19	Current Maintenance			50 892 291	8 453 543	19 9	19
20	Depreciation			58 721 578	9 925 680	20 3	20
21	Taxes			21 798 643	2 103 222	10 7	21
22	**Total Telephone Expenses**			298 713 102	49 499 210	19 9	22
23	**Net Telephone Earnings**			46 493 191	1 855 077	4 2	23
24	Sundry Net Earnings			5 646 661	758 675	15 5	24
25	Total Net Earnings			52 139 852	2 613 752	5 3	25
26	Deduct Interest			21 226 448	2 136 299	11 2	26
27	Balance Net Profits			30 913 404	477 453	1 6	27
28	Deduct Dividends (Paid and Accrued)*			34 426 791	1 997 462	6 2	28
29	Undivided Profits			[redacted]	[redacted]	x x	29

30 **Annual Div. Rate—Com.** 6.5 **~~Pref.~~** — % **Total Plant per Station**—End of Month 144.69 Dec. 31 last 146.79

	AVERAGES.	j This Month	k Last Month	l 12 Mos. This Year	m Same Period last Year	n % Increase l over m	
31	Average Plant in Service (Excludes Gen'l Equipment)			1064 049 700	998 682 600	6 5	31
32	Average Number of Company Stations			7 413 440	7 138 912	3 8	32
33	Average Capital Obligations			900 016 700	857 376 800	5 0	33
34	Average Capital Stock (~~Common~~)			528 583 000	499 688 600	5 8	34
35	Av. Mo. Tel. Rev. per Station—Gross			3 880	3 430	13 1	35
36	—Net			523	521	4	36

	PERCENTAGES. (Annual Basis)	o This Month	p Last Month	q 12 Mos. This Year	r Same Period last Year	
37	Total Telephone Revenues to Average Plant in Service	%	%	32.4 %	29.4 %	37
38	Operation Expenses to Telephone Revenues	%	%	48.5 %	47.1 %	38
39	Telephone Expenses to Telephone Revenues	%	%	86.5 %	84.8 %	39
40	Current Maintenance to Average Plant in Service	%	%	4.9 %	4.3 %	40
41	Depreciation to Average Plant in Service (Includes 2011	%	%	5.6 %	5.0 %	41
42	Net Telephone Earnings to Average Plant in Service	%	%	4.4 %	4.5 %	42
43	Total Net Earnings to Average Capital Obligations	%	%	5.8 %	5.8 %	43
44	Bal. Net Prof. (~~after Pref. Dividend~~) to Ave. ~~Com.~~ Stock Capital	%	%	5.8 %	6.1 %	44

	STATIONS.	s Total at end of Month	t Per 100 Population	u Net Gain this Month	v Net Gain since Dec. 31 last	w Per Cent Net Gain Expected	x Per Cent Net Gain Realized	
45	Company Stations	7 686 891	7 1	76 063	538 511	4 2	7 5	45
46	Connecting Stations (Including Service and Private Line)	4 033 601	3 8	5 061	189 998		4 9	46
47	Total	11 720 492	10 9	81 124	728 509		6 6	47
48	Subscribing Stations	74 927	1	[redacted]	1 253	xxxx	1.7	48
49	Independent Stations (Estimated) (Not Including Subscribing)	872 727	8	[redacted]	[redacted]	xxxx	[redacted]	49

Date issued .....19..
Should be issued not later than 20th.

* Over .....

General Auditor.

† Capital Stock	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Common	496 148 728		3 536 050	7
Preferred	36 000 000		0	0

* Deduct Dividends (Paid and Accrued)	This Month	f Increase over last Month	g ....Mos. this Year	h Incr. over same Period last Year	i % Increase
Common					
Preferred					

CR 5 IA 12/19

[fol. 3754]

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December, 1920

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	27,919,601
2	Physical Property	1,288,044,589
3	Investments	54,203,547
4	Cash and Deposits	14,636,337
5	Receivables, Etc.	89,164,232
6	Total Assets	1,473,968,306
7	Capital Stock	570,660,192
8	Funded Debt	304,319,675
9	Advances from System Corporations	178,085,815
10	Bills Payable	10,130,141
11	Other Payables, etc.	66,888,771
12	Reserves for Depreciation	281,744,199
13	Surplus	62,139,513
14	Total Liabilities	1,473,968,306

		g. 12 Mos. This Year
23	Net Telephone Earnings	43,361,357
24	Sundry Net Earnings	7,431,943
25	Total Net Earnings	50,793,300
26	Deduct Interest	25,158,987
27	Balance Net Profits	25,634,313
28	Deduct Dividends (Paid and Accrued)	35,397,626
29	Undivided Profits	9,763,313
30	Annual Div. Rate: Com. 6.6%; Total Plant per Station:	
	End of Month	150.26
	Dec. 31 Last	144.69

	Averages:	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,147,830,100
32	Average Number of Company Stations	8,000,118
33	Average Capital Obligations	982,946,100
34	Average Capital Stock	544,677,100
35	Av. Mo. Tel. Rev. per Station—Gross	4.248
36	—Net	452

	Percentages (Annual Basis):	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.5%
38	Operation Expenses to Telephone Revenues	52.7%
39	Telephone Expenses to Telephone Revenues	89.4%
40	Current Maintenance to Average Plant in Service	5.6%
41	Depreciation to Average Plant in Service (Includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	3.8%
43	Total Net Earnings to Average Capital Obligations	5.2%
44	Bal. Net Prof. to Ave. Capital Stock	4.7%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3754A]

CR 51a 12,20

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Over Dec. 31 Last	(d) Increase Over Dec. 31
Common	534,556,592		38,407,864	7.7
Preferred	36,103,600		103,600	.3

[fol. 3755] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #68

Associated Operating Companies

(Excludes American Tel. and Tel. Co.—Long Lines)

Condensed Summary of Reports for December 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	24,740,742
2	Physical Property	1,453,955,125
3	Investments	73,299,100
4	Cash and Deposits	28,697,990
5	Receivables, etc	106,455,881
6	Total Assets	1,687,148,838
7	Capital Stock	668,935,197
8	Funded Debt	402,253,068
9	Advances from System Corporations	147,854,090
10	Bills Payable	989,665
11	Other Payables, etc	77,101,247
12	Reserves for Depreciation	320,065,668
13	Surplus	69,949,903
14	Total Liabilities	1,687,148,838

	Earnings and Expenses:	(g) 12 Mos. This Year
23	Net Telephone Earnings	67,791,436
24	Sundry Net Earnings	10,169,226
25	Total Net Earnings	77,960,662
26	Deduct Interest	31,046,265
27	Balance Net Profits	46,914,397
28	Deduct Dividends (Paid and Accrued)	39,515,268
29	Undivided Profits	7,399,129
30	Annual dividend rate (a) 6.7%; Total Plant per Station—	
	At end of Month	159.35
	At Dec. 31 last	150.26

	Averages:	12 Mos. This Year
31	Average Plant in Service	1,273,243,400
32	Average Number of Company Stations	8,551,501
33	Average Capital Obligations	1,119,088,000
34	Average Capital Stock	588,777,500
35	Av. Mo. Tel. Rev. per Station—Gross	4,429
36	—Net	661

	Percentages (Annual Basis):	(q) 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.7%
38	Operation Expenses to Telephone Revenues	49.2%
39	Telephone Expenses to Telephone Revenues	85.1%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant in Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	5.3%
43	Total Net Earnings to Average Capital Obligations	7.0%
44	Balance Net Profits to Average Capital Stock	8.0%

[fol. 3756]

CR 51 A

(a) Rate per annum of Dividends paid to Average Capital Stock for Year 1921.

[fol. 3757]

CR 51 A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #69

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	24,625,479
2	Physical Property	1,629,166,129
3	Investments	68,566,452
4	Cash and Deposits	24,009,095
5	Receivables, etc	102,513,561
6	Total Assets	1,848,880,716
7	Capital Stock	765,619,097
8	Funded Debt	456,998,444
9	Advances from System Corporations	101,235,737
10	Bills Payable	426,164
11	Other Payables, etc	89,697,475
12	Reserves for Depreciation	361,756,465
13	Surplus	73,147,334
14	Total Liabilities	1,848,880,716

	Earnings and Expenses:	(g) 12 Mos. This Year
23	Net Telephone Earnings	80,928,063
24	Sundry Net Earnings	12,548,746
25	Total Net Earnings	93,476,809
26	Deduct Interest	33,214,939
27	Balance Net Profits	60,261,870
28	Deduct Dividends (Paid and Accrued)	47,983,291
29	Undivided Profits	*12,278,579
30	Annual Dividend Rate, (a) 6.8% Total Plant per Station—	
	At end of Month	$167.36
	At Dec. 31 last	159.35

	Averages:	(l) 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,421,664,000
32	Average Number of Company Stations	9,132,420
33	Average Capital Obligations	*1,270,664,500
34	Average Capital Stock	†705,135,400
35	Av. Mo. Tel. Rev. per Station—Gross	4,542
36	—Net	738

	Percentages (Annual Basis):	(q) 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.0%
38	Operation Expenses to Telephone Revenues	47.0%
39	Telephone Expenses to Telephone Revenues	83.7%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (Includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	5.7%
43	Total Net Earnings to Average Capital Obligations	7.4%
44	Balance Net Profits to Average Capital Stock	8.5%

[fol. 3758] CR 51A 12/22

a) Rate per annum of Dividends paid for year 1922 to Average Capital Stock.

*Includes revenues held in reserve pending rate decisions as follows:

Michigan State Tel. Co	$629,329
Ohio Bell Tel. Co	155,197
Southern Bell T. and T. Co	167,203
Cumberland Tel. and Tel. Co	411,000
Southwestern Bell Tel. Co	335,877
	$1,698,606

*Includes Capital Stock Installments.

†Excludes Capital Stock Instaliments.

[fol. 3759] CR 51A Dec. 1924

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #70

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December 1923.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	$25,640,294
2	Physical Property	1,866,704,382
3	Investments	52,568,548
4	Cash and Deposits	35,925,265
5	Receivables, etc	105,309,934
6	Total Assets	2,086,148,423
7	Capital Stock	874,798,017
8	Funded Debt	449,949,934
9	Advances from System Corporations	173,395,065
10	Bills Payable	248,294
11	Other Payables, etc	104,777,473
12	Reserves for Depreciation	405,118,574
13	Surplus	77,861,066
14	Total Liabilities	2,086,148,423

		(g) 12 Mos. This Year
23	Net Telephone Earnings	86,236,025
24	Sundry Net Earnings	12,946,470
25	Total Net Earnings	99,182,495
26	Deduct Interest	33,392,755
27	Balance Net Profits	65,789,740
28	Deduct Dividends (Paid and Accrued)*	57,003,931
29	Undivided Profits	=8,785,809
30	Annual Div. Rate: Com. (a) 7.1%; Pref. (a) 6.5%; Total Plant per Station: End of Month	175.19
	Dec. 31 last	167.36

	Averages:	(l) 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,608,583,800
32	Average Number of Company Stations	9,919,054
33	Average Capital Obligations	‡1,411,249,200
34	Average Capital Stock (Common)	*687,829,200
35	Av. Mo. Tel. Rev. per Station—Gross	4,596
36	—Net	724

	Percentages (Annual Basis):	(q) 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	34.0%
38	Operation Expenses to Telephone Revenues	46.9%
39	Telephone Expenses to Telephone Revenues	84.2%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant in Service (Includes 261)	5.1%
42	Net Telephone Earnings to Average Plant in Service	5.4%
43	Total Net Earnings to Average Capital Obligations	7.0%
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	8.3%

[fol. 3760] CR 51A Dec. 1923

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) Increase over Dec. 31
Common	738,397,470	14,421,200	95,447,320	14.8
Preferred	136,400,547	2,017,000	13,731,609	11.2

* Deduct Dividends (Paid and Accrued):

	(e) This Month	(f) Increase over last Month	(g) 12 Mos. this Year	(h) Increase over same period last Year	(i) % Increase
Common	4,354,810	124,999	48,571,781	7,116,342	17.2
Preferred	729,885	2,700	8,432,150	1,904,298	29.2

(a) Rate per annum of Dividends paid for year 1923.
= Includes revenues held in reserve pending rate decisions as follows:

Southern Bell Tel. and Tel. Co.	$238,919
Cumberland Tel. and Tel. Co.	178,000
Ohio Bell Telephone Company	22,705

Michigan State Telephone Company	1,337,219
Indiana Bell Telephone Company	200,000
Illinois Bell Telephone Company	460,298
Southwestern Bell Telephone Company	127,698
	2,564,839
Transferred to Employees' Benefit Fund:	
Southern New England Tel. Company	100,000
Southwestern Bell Telephone Company	292,500
	$2,957,339

* Includes Capital Stock Installments.
** Excludes Capital Stock Installments.

[fol. 3761] C. R. 51A Dec. 1924

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #71

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December, 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	25,866,191
2	Physical Property	2,139,466,453
3	Investments	57,444,499
4	Cash and Deposits	21,207,102
5	Receivables, etc.	132,902,625
6	Total Assets	2,376,886,870
7	Capital Stock	*1,046,598,947
8	Funded Debt	486,094,697
9	Advances from System Corporations	206,698,237
10	Bills Payable	365,317
11	Other Payables, etc.	108,613,296
12	Reserves for Depreciation	443,659,830
13	Surplus	84,856,546
14	Total Liabilities	2,376,886,870

		(g) 12 Mos. This Year
24	Net Telephone Earnings	98,720,559
25	Sundry-Net Earnings	11,942,455
26	Total Net Earnings	110,663,014
27	Deduct Interest	37,170,405
28	Balance Net Profits	73,492,609
29	Deduct Dividends (Paid and Accrued)	68,831,147
30	Undivided Profits	**4,661,462
31	Annual Div. Rate Com., (a) 7.3%; Pref. (a) 6.5%; Total Plant per Station—	
	End of Month	186.22
	December 31 last	175.19

	Averages:	(l) 12 Mos. This Year
32	Average Plant in Service (Excludes Gen'l Equipment)	1,855,663,800
33	Average Number of Company Stations	10,760,121
34	Average Capital Obligations	*1,623,452,700
35	Average Capital Stock (Common)	¢787,458,200
36	Av. Mo. Tel. Rev. per Station—Gross	4,732
	—Net	765

	Percentages (Annual Basis):	(q) 12 Mos. This Year
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	32.5%
39	Operation Expenses to Telephone Revenues	46.3%
40	Telephone Expenses to Telephone Revenues	83.8%
41	Current Maintenance to Average Plant in Service	5.1%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
43	Net Telephone Earnings to Average Plant in Service	5.3%
44	Total Net Earnings to Average Capital Obligations	6.8%
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	7.9%

[fol. 3762] CR 51A Dec. 1924

Capital Stock	(a) At end of Month	(b) Increase over last month	(c) Increase over Dec. 31, last	(d) % Increase over Dec. 31
Common	862,206,200	37,000,000	123,808,730	16.8
Preferred	184,392,747	70,700	47,992,200	35.2

* Deduct Dividends (Paid and Accrued)

	(e) This Month	(f) Increase over last month	(g) 12 Mos. this Year	(h) Incr. over same period last year	(i) % Increase
Common	7,082,210	2,217,833	57,796,437	9,224,656	19.0
Preferred	987,494	***937	11,034,710	2,602,560	30.9

(a) Rate per annum of Dividends paid for year 1924 to Average Common and Preferred Capital Stock.

** Includes:

Revenues held in reserve pending rate decision—		
Illinois Bell Tel. Co.		$1,788,585
Transferred to Employees' Benefit Fund:		
Southern New England Tel. Co.	$100,000	
Chesapeake and Potomac Tel. Co.	107,049	
Cinn. and Subn. Bell Tel. Co.	150,000	
Wisconsin Telephone Company	189,070	
Southwestern Bell Tel. Co.	593,550	
		1,139,669
Grand Total		$2,928,254

* Includes Capital Stock Installments.
¢ Excludes Capital Stock Installments.
***Red Figures.

[fol. 3763] CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #72

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1925

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	15,851,866
2	Physical Property	2,397,536,299
3	Investments	55,944,704
4	Cash and Deposits	23,170,996
5	Receivables, etc.	130,835,814
6	Total Assets	2,623,339,679
7	Capital Stock	1,184,839,997
8	Funded Debt	504,568,895
9	Advances from System Corporations	233,046,522
10	Bills Payable	672,000
11	Other Payables, etc.	119,318,932
12	Reserves for Depreciation	484,783,901
13	Surplus	96,109,432
14	Total Liabilities	2,623,339,679

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	126,657,601
25	Sundry Net Earnings	10,099,471
26	Total Net Earnings	136,757,072
27	Deduct Interest	39,440,986
28	Balance Net Profits	97,316,086
29	Deduct Dividends (Paid and Accrued)—	
30	Preferred	11,897,002
	Common	68,519,430
31	Total Dividends	80,416,432
32	Undivided Profits	16,899,654
33	Annual Div. Rate: Com., (a) 7.4%; Pref., (a) 6.4%; Total Plant per Station—	
	End of Month	194.26
	Dec. 31, last	186.22

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,133,656,400
35	Average Number of Company Stations	11,556,173
36	Average Capital Obligations	*1,816,831,500
37	Average Capital Stock (Common)	*925,062,600
38	Av. Mo. Tel. Rev. per Station—Gross	4,961
	—Net	913

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.8%
41	Operation Expenses to Telephone Revenues	43.8%
42	Telephone Expenses to Telephone Revenues	81.6%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earning to Average Plant in Service	5.9%
46	Total Net Earnings to Average Capital Obligations	7.5%
47	Bal. Net. Prof. (after Pref. Dividend) to Av. Com. Stock	9.2%

[fol. 3764] CR 51A Dec. 1925

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) % Increase over Dec. 31
Preferred	185,344,247	3,900	951,500	.5
Common	999,312,400	37,859,750	137,106,200	15.9
Installments	183,350	7,314,475**	183,350	x
Total Capital Stock.	1,184,839,997*	30,549,175	138,241,050	13.2

(a) Rate per annum of Dividends paid for year 1925 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
# Excludes Capital Stock Installments.
¢ Connecting Stations have been adjusted for natural growth.
** Red figures.

[fol. 3765] CR 51 A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT # 73

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1926.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	17,407,344
2	Physical Property	2,627,389,976
3	Investments	69,676,465
4	Cash and Deposits	21,899,367
5	Receivables, etc	131,997,174
6	Total Assets	2,868,370,326
7	Capital Stock	1,331,879,812
8	Funded Debt	538,133,600
9	Advances from System Corporations	217,523,078
10	Bills Payable	863,075
11	Other Payables, etc	140,063,531
12	Reserves for Depreciation	524,390,081
13	Surplus	115,517,149
14	Total Liabilities	2,868,370,326

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	150,489,304
25	Sundry Net Earnings	8,979,851
26	Total Net Earnings	159,469,155
27	Deduct Interest	38,609,633
28	Balance Net Profits	120,859,522
	Deduct Dividends (Paid & Accrued)—	
29	Preferred	12,103,216
30	Common	84,803,779
31	Total Dividends	96,906,995
32	Undivided Profits	23,952,527
33	Annual Div. Rate-Com. (a) 7.7% Pref. (a) 6.4% Total	
	Plant per Station—	
	End of Month	200.96
	Dec. 31 last	194.96

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,394,713,000
35	Average Number of Company Stations	12,355,747
36	Average Capital Obligations	*1,993,864,500
37	Average Capital Stock (Common)	#1,100,879,800
38	Av. Mo. Tel. Rev. per Station—Gross	5.172
39	—Net	1.015

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Excep' Adv. & Dir.) to Av. Plant in Service	31.5%
41	Operation Expenses to Telephone Revenues	41.8%
42	Telephone Expenses to Telephone Revenues	80.4%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.9%
45	Net Telephone Earnings to Average Plant in Service	6.3%
46	Total Net Earnings to Average Capital Obligations	8.0%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.9%

[fol. 3766]

R 51 A

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	189,182,347	59,500	3,838,100	2.1
Common	1,141,988,100	13,500,000	142,675,700	14.3
Installments	709,365	27,707	526,015	x
Total Capital Stock	1,331,879,812	13,937,207	147,039,815	12.4

(a) Rate per annum of Dividends paid for year 1926 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

Excludes Capital Stock Installments.

CR 51 A

[fol. 3767]

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #74

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1927

		(a) At End of Month
	Assets and Liabilities:	
1	Intangible Capital	17,299,811
2	Physical Property	2,873,929,310
3	Investments	68,960,222
4	Cash and Deposits	23,326,933
5	Receivables, etc	134,752,217
6	Total Assets	3,118,268,493
7	Capital Stocks	1,515,387,147
8	Funded Debt	537,386,800
9	Advances from System Corporations	202,687,019
10	Bills Payable	6,421,889
11	Other Payables, etc	149,680,003
12	Reserves for Depreciation	565,774,463
13	Surplus	140,931,172
14	Total Liabilities	3,118,268,493

		(g) 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	160,549,619
25	Sundry Net Earnings	9,414,212
26	Total Net Earnings	169,963,831
27	Deduct Interest	41,773,071
28	Balance Net Profits	128,190,760
	Deduct Dividends (Paid & Accrued)	
29	Preferred	12,232,410
30	Common	93,535,299
31	Total Dividends	105,767,709
32	Undivided Profits	22,423,051
33	Annual Div. Rate. Com. (a) 7.8% Pref. (a) 6.4% Total	
	Plant per Station—	
	End of Month	205.58
	Dec. 31 last	199.26

		(l) 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	2,619,193,700
35	Average Number of Company Stations	13,265,697
36	Average Capital Obligations	2,145,043,500
37	Average Capital Stock (Common)	1,203,913,600
38	Av. Mo. Tel. Rev. per Station—Gross	5,244
39	—Net	1,009

	Percentages (Annual Basis):	(q) 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.3%
41	Operation Expenses to Telephone Revenues	41.6%
42	Telephone Expenses to Telephone Revenues	80.8%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.9%
45	Net Telephone Earnings to Average Plant in Service	6.1%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.6%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3768] C R 51 A

Capital Stock	(a) At End of Month	(b) Increase over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	190,125,447	10,000	943,100	.5
Common	1,325,238,800	83,000,000	183,250,700	16.0
Installments	22,900	10,510	686,465**	x
Total Capital Stock	1,515,387,147	83,020,510	183,507,335	13.8

(a) Rate per annum of Dividends paid for year 1927 to Average Common and Preferred Capital Stock.
* Includes Capital Stock Installments.
** Excludes Capital Stock Installments.

[fol. 3769] C R 51 A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #75

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1928

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	16,378,827
2	Physical Property	3,100,043,913
3	Investments	72,872,576
4	Cash and Dsposits and Temporary Investments	29,462,758
5	Receivables, etc.	143,074,867
6	Total Assets	3,361,832,941
7	Capital Stock	1,660,216,712
8	Funded Debt	533,618,470
9	Advances from System Corporations	189,618,872
10	Bills Payable	44,625,018
11	Other Payables, etc.	139,350,297
12	Reserves for Depreciation	608,667,129
13	Surplus	185,736,443
14	Total Liabilities	3,361,832,941

	Earnings and Expenses:	(g) 12 Mos. This Year
24	Net Telephone Earnings	184,577,988
25	Sundry Net Earnings	9,637,064
26	Total Net Earnings	194,215,052
27	Deduct Interest	40,127,942
28	Balance Net Profits	154,087,110
29	Deduct Dividends (Paid and Accrued)—	
	Preferred	12,243,464
	Common	109,453,671
31	Total Dividends	121,697,135
32	Undivided Profits	32,389,975
33	Annual Div. Rate: Com., (a) 7.9%; Pref., (a) 6.4%; Total Plant per Station—	
	End of Month	209.34
	Dec. 31 last	205.58

	Averages:	(i) 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,853,893,600
35	Average Number of Company Stations	14,010,872
36	Average Capital Obligations	*2,314,342,700
37	Average Capital Stock (Common)	¢1,391,772,500
38	Av. Mo. Tel. Rev. per Station—Gross	5,357
39	—Net	1,098

	Percentages (Annual Basis):	(q) 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.0%
41	Operation Expenses to Telephone Revenues	39.5%
42	Telephone Expenses to Telephone Revenues	79.5%
43	Current Maintenance to Average Plant in Service	5.0%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	6.5%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	10.2%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interestate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3770] CR 51 Dec. 1928

	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) %Increase over Dec. 31
Preferred	190,247,047	4,000	121,600	.1
Common	1,469,963,150	50,501,000	144,724,350	10.9
Installments	6,515	***2,405	***16,385	***71.6
Total Capital Stock	1,660,216,712	50,502,595	144,829,565	9.6

(a) Rate per annum of dividends paid for year 1928 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

¢ Excludes Capital Stock Installments.

*** Red figures.

[fol. 3771] CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #76

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		(a) At End of Month
	Assets and Liabilities:	
1	Intangible Capital	15,198,389
2	Physical Property	3,431,041,856
3	Investments	77,861,084
4	Cash and Deposits and Temporary Investments	29,474,631
5	Receivables, etc.	150,018,362
6	Total Assets	3,703,594,322
7	Capital Stock	1,750,200,297
8	Funded Debt	561,955,909
9	Advances from System Corporations	304,395,933
10	Bills Payable	57,617,672
11	Other Payables, etc.	160,742,660
12	Reserves for Depreciation	649,046,715
13	Surplus	219,635,136
14	Total Liabilities	3,703,594,322

		(g) 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	202,149,729
25	Sundry Net Earnings	10,138,978
26	Total Net Earnings	212,288,707
27	Deduct Interest	47,094,310
28	Balance Net Profits	165,194,397
	Deduct Dividends (Paid and Accrued)—	
29	Preferred	12,246,315
30	Common	117,878,032
31	Total Dividends	130,124,347
32	Undivided Profits	35,070,050
33	Annual Div. Rate: Com., (a) 7.9%; Pref., (a) 6.4%; Total Plant per Station—	
	End of Month	217.75
	Dec. 31 last	209.34

		(l) 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	3,099,527,900
35	Average Number of Company Stations	14,892,177
36	Average Capital Obligations	2,530,243,200
37	Average Capital Stock (Common)	1,497,903,900
38	Av. Mo. Tel. Rev. per Station—Gross	5,505
39	—Net	1,131

	Percentages (Annual Basis)	12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.12%
41	Operation Expenses to Telephone Revenues	39.41%
42	Telephone Expenses to Telephone Revenues	79.45%
43	Current Maintenance to Average Plant in Service	5.34%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.83%
45	Net Telephone Earnings to Average Plant in Service	6.52%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	10.21%

[fol. 3772]

CR 51A

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) % Increase over Dec. 31
Preferred	190,256,147	0	9,100	.0
Common	1,539,890,050	24,860,400	69,926,900	4.8
Installments	20,054,100	55,875	20,047,585	x
Total Capital Stock	1,750,200,297	24,916,275	89,983,585	5.4

(a) Rate per annum of Dividends paid for Year 1929 to Average Common and Preferred Capital Stock.
¢ Includes Capital Stock Installments.
* Excludes Capital Stock Installments.

[fol. 3773]

CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #77

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1930

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	13,325,904
2	Physical Property	3,709,280,965
3	Investments	91,243,102
4	Cash and Deposits and Temporary Investments	30,258,411
5	Receivables, etc.	154,205,679
6	Total Assets	3,998,314,061
7	Capital Stock	1,968,141,347
8	Funded Debt	571,196,727
9	Advances from System Corporations	319,873,940
10	Bills Payable	72,458,082
11	Other Payables, etc.	150,200,852
12	Reserves for Depreciation	681,859,226
13	Surplus	234,583,887
14	Total Liabilities	3,998,314,061

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	199,067,989
25	Sundry Net Earnings	12,221,932
26	Total Net Earnings	211,289,921
27	Deduct Interest	51,666,774
28	Balance Net Profits	159,623,147
	Deduct Dividends (Paid & Accrued)	
29	Preferred	12,246,439
30	Common	128,662,579
31	Total Dividends	140,909,018
32	Undivided Profits	18,714,129
33	Annual Div. Rate-Com. (a) 7.58% Pref. (a) 6.44% Total Plant per Station— End of Month	232.29
	Dec. 31 last	217.75

	Averages	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3,407,192,400
35	Average Number of Company Stations	15,516,088
36	Average Capital Obligations	¢2,811,682,300
37	Average Capital Stock (Common)	¥1,696,920,900
38	Av. Mo. Tel. Rev. per Station —Gross	5,471
39	—Net	1,069

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir) to Av. Plant in Service	29.29%
41	Operation Expenses to Telephone Revenues	38.94%
42	Telephone Expenses to Telephone Revenues	80.46%
43	Current Maintenance to Average Plant in Service	5.16%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix	4.81%
45	Net Telephone Earnings to Average Plant in Service	5.84%
46	Bal. Net Prof. (after pref. Dividend) to Av. Com. Stock	8.68%

[fol. 3774] CR 51 A

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) Increase Over Dec. 31
Preferred	190,256,147	0	0	0
Common	1,777,885,200	30,400	237,995,150	15.5
Installments	0	**900	**20,054,100	**100.0
Total Capital Stock	1,968,141,347	29,500	217,941,050	12.5

a) Rate per annum of Dividends paid for year 1930 to Average Common and Preferred Capital Stock.

¢ Includes Capital Stock Installments.

¥ Excludes Capital Stock Installments.

* Includes 123,199 stations of Lehigh Tel. Co. and several connecting companies of the Pacific Tel. and Tel. Co. and New England Tel. and Tel. Co. merged in April, June and July.

[fol. 3775] Dep. Ex. 104

$125,000,000

(Total Issue)

American Telephone and Telegraph Company Thirty-Five Year Sinking Fund 5% Gold Debentures

Dated January 1, 1925. Due January 1, 1960

Issued under Indenture dated January 1, 1925, Central Union Trust Company of New York, Trustee

Interest payable January 1 and July 1 in New York or Boston

Redeemable in whole or in part at the option of the Company at 110% and accrued interest on any interest date on or prior to July 1, 1956; thereafter at 100% and accrued interest.

A Sinking Fund of $1,250,000 annually is to be set aside in equal semi-annual installments beginning July 1, 1925, such Fund to be used in purchasing Debentures of this issue if obtainable at not exceeding 102½% and accrued interest; otherwise, to be used for capital expenditures.

Coupon Debentures in denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable

H. B. Thayer, Esq., President of the American Telephone and Telegraph Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Assets.—The total assets of the American Telephone and Telegraph Company on September 30, 1924, were carried on its books at more than $1,463,000,000, based upon valuations which are distinctly conservative. All the property of the Company is free from lien, except that stocks and bonds having a book value of about $257,000,000 have been pledged under Indentures securing Collateral Trust Bonds.

Equity.—Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due chiefly to the sale to stockholders of large amounts of capital stock. After giving effect to the present issue of Debentures, the Company's funded debt will have increased less than $81,000,000 since December 31, 1920, whereas capital stock (including installments) has increased by over $457,000,000. Funded debt, giving effect to this financing, will be less than $400,000,000, while capital stock amounts to more than $900,000,000. Thus, funded debt will comprise only about 30% of the Company's total capital liabilities (as compared with 42% on December 31, 1920) and will amount to little more than 25% of the book value of the Company's total assets.

Earnings.—

Year ended December 31	Net Earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1914	$40,557,977	$8,223,163	$32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3
1923	95,389,918	13,697,737	81,692,181	6.9

During this ten-year period, net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have exceeded 3½ times interest charges. It is estimated that for the year 1924 net earnings available for interest were in excess of $105,000,000, which is more than six times the estimated interest charges during 1924 and more than five times the annual interest charges on the Company's total funded debt to be outstanding after the issue of these Debentures, without regard to the earnings which will be derived immediately from the investment of the proceeds of this issue.

Divided Record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate

of at least $7.50 per share in each of the past 43 years. For approximately 15 years, ended in 1921, the rate was $8 per share annually; since then, $9 per share per annum has been paid.

Provisions.—In the Indenture under which these Debentures are to be issued, the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures as above stated, or ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the above-mentioned 5% Bonds of 1946.

Purpose of Issue.—The proceeds of these Debentures will be used to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures, it being the intention of the American Telephone and Telegraph Company to utilize the greater part of these proceeds in making loans to its Associated Companies or in acquiring their securities.

The above debentures are offered for subscription, subject to the conditions stated below, at 95% and accrued interest, to yield over 5.30%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Thursday, January 8, 1925, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for.

All subscriptions received are to be subject to the issue of the Debentures as planned, and to approval by counsel of the form and validity of the documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their

order, and the date of payment (on or about January 22, 1925) will be stated in the notices of allotment. Temporary Debentures or J. P. Morgan & Co. Interim Receipts, exchangeable for definitive Debentures when received from the Company, will be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder Peabody & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, January 8, 1925.

[fol. 3776] American Telephone and Telegraph Company

Telephone and Telegraph Building

195 Broadway

H. B. Thayer, President

New York, January 7, 1925.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

Dear Sirs: With reference to the issue of $125,000,000 Thirty-Five Year Sinking Fund 5% Gold Debentures of the American Telephone and Telegraph Company, I beg to give you the following information regarding the business of the Company and this issue of Debentures:

The proceeds of these Debentures will be used to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. The American Telephone and Telegraph Company is the parent Company of the Bell System and, among other functions, serves as a financing agency for the System. In this capacity, it makes loans to its Associated Companies or acquires their securities, and the greater part of the proceeds of this issue will be so utilized.

The total assets of the American Telephone and Telegraph Company on September 30, 1924, were carried on its books at more than $1,463,000,000. Stocks and bonds of associated and affiliated companies, carried at valuations which are distinctly conservative, amount to more than

$954,000,000, and the Company's long distance telephone plant, telephone instruments and real estate have a book cost of over $186,000,000. All the property of the Company is free from lien, except that stocks and bonds having a book value of about $257,000,000 have been pledged under Indentures securing Collateral Trust Bonds, which are now outstanding in the amount of approximately $161,000,000.

Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due chiefly to the sale to stockholders of large amounts of capital stock. The most recent sale, that of June, 1924, was of $150,000,000 stock at par, believed to be the largest operation of its kind ever carried out, and resulting in 193,000 subscriptions averaging about 7.7 shares each. After giving effect to the present issue of Debentures, the Company's funded debt will have increased less than $81,000,000 since December 31, 1920, whereas capital stock (including installments) has increased by over $457,000,000. Funded debt, giving effect to this financing, will be less than $400,000,000, while capital stock amounts to more than $900,000,000. Thus, funded debt will comprise only about 30% of the Company's total capital liabilities (as compared with 42% on December 31, 1920) and will amount to little more than 25% of the book value of the Company's total assets.

The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges, and its net income during the past ten years, have been as follows:

Year Ended December 31	Net Earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1914	$40,557,977	$ 8,223,163	$32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,598,012	66,170,428	5.3
1923	95,389,918	13,697,737	81,692,181	6.9

During this ten-year period, net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have exceeded 3½ times interest charges. It is estimated that for the year 1924 net earnings available for interest were in excess of $105,000,000, which is more than six times the estimated interest charges during 1924 and more than five times the annual interest charges on the Company's total funded debt to be outstanding after the issue of these Debentures, without regard to the earnings which will be derived immediately from the investment of the proceeds of this issue.

Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 43 years. For approximately 15 years, ended in 1921, the dividend rate was $8 per share annually; since then, $9 per share per annum has been paid. During this entire period, net income in each year has been larger than dividend payments, leaving a balance annually for surplus.

The American Telephone and Telegraph Company owns directly or indirectly more than 90% of the voting stock of its 25 associated operating companies, and nearly all the voting stock of the Western Electric Company, Incorporated, which is the manufacturing, supply and warehousing organization for the Bell Telephone System. It also owns and operates directly the long-distance telephone plant which, with more than 1,300,000 miles of toll wire, joins together the systems of the local telephone companies [fol. 3777] and makes a nation-wide service possible. Under contract with its Associated Companies, it furnishes and maintains the telephone instruments used by them and performs for these companies important services in the fields of research and development work, as well as providing assistance and advice along engineering, operating, financial, accounting, and other lines, all of which services are essential to the operation and continued success of the Bell System. The Company owns, controls or is licensed under more than 7,500 U. S. letters patent and applications covering every phase of the telephone business. The Company's statement of assets does not include any valuation of these patents.

The Bell Telephone System, which furnishes telephone service throughout the United States, comprised at the end of December, 1924, more than 15,850,000 telephone stations,

of which more than 11,200,000 were owned by the Associated Companies of the System and the remainder by their connecting companies. The business of the System continues to grow steadily (about 800,000 stations having been added in 1924) in response to the urgent demands of the public for increased telephone service. It is a business dependent on no single industry, community or class of population. The service provided is nation-wide, reaching all industries and all classes. It is an essential service, worth much more to the subscriber than it costs him, and it has become indispensable to the economic and social life of the nation.

The business and financial policy of the Bell Telephone System has always been conservative. High standards of plant construction and maintenance have been adhered to, and adequate provision has been made from current revenues for depreciation and obsolescence. The capital structure of the System is conservative. The capital stock and obligations outstanding in the hands of the public on September 30, 1924, amounted to approximately $1,832,000,000, of which capital stock (and installments) comprised over $1,073,000,000, or more than 58%. The book value of the net assets devoted to earning interest and dividends amounted, on the same date, to over $2,517,000,000, or more than 137% of the total capital liabilities of the System on which interest and dividends are paid. The excess of net assets over total capital liabilities (including stock), about $684,000,000, represents the combined surplus and reserves of the American Telephone and Telegraph Company and of its Associated Companies, accumulated over along period of years and invested in the properties of the Companies. This is a factor which contributes in a very large measure to the great financial strength of the Bell Telephone System.

The Thirty-Five Year Sinking Fund 5% Gold Debentures of the American Telephone and Telegraph Company are to be issued under an indenture with Central Union Trust Company of New York, as Trustee, in which Indenture the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by pledge, with the Trustee under the Indenture under which these Debentures are issued, of stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations set

forth in the Indenture with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge with the Trustee as above stated, or secure them ratably with the other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral required so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the Company's above-mentioned 5% Bonds of 1946.

The Indenture will provide for sinking fund payments to a Trustee at the rate of $1,250,000 annually, payable in equal semi-annual installments beginning July 1, 1925, such payments to be used in purchasing Debentures of this issue if obtainable at not exceeding 102½% and accrued interest; otherwise to be used for capital expenditures against which no debt obligations of the Company may be issued.

The Debentures are to be limited to the present issue of $125,000,000. They are to be dated January 1, 1925, are to mature January 1, 1960, and are to bear interest at the rate of 5% per annum, payable semi-annually January 1 and July 1 in each year, at the office or agency of the Company in New York City or in Boston at the option of the holder. The Debentures are to be issued in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000, the coupon Debentures and the registered Debentures and the several denominations of each to be interchangeable. They may be redeemed at the option of the Company, in whole or in part, upon sixty days' notice, on any interest date at the following prices with accrued interest: If on or prior to July 1, 1956, at 110%, and if subsequent to July 1, 1956, at par.

Application for the listing of these Debentures on the New York Stock Exchange will be made by the Company in due course.

Yours very truly, H. B. Thayer, President.

[fol. 3778] American Telephone and Telegraph Company

Balance Sheet—September 30, 1924

Assets

Stocks of Associated Companies	$846,983,531
Bonds and Notes of and Net Advances to Associated Companies	200,764,026
Stocks and Notes of and Advances to Other Companies	100,886,983
Telephone Plant and Equipment	171,451,399
Real Estate, Furniture and Fixtures	15,490,689
Bills and Accounts Receivable	10,990,877
Cash and Temporary Investments	116,689,876
Total	$1,463,257,381

Liabilities

Capital Stock (Including Installments)	$900,095,485
4% Collateral Trust Bonds 1929	$ 78,000,000
5% Collateral Trust Bonds 1932 (Western Tel. and Tel. Co.)	9,969,000
5% Collateral Trust Bonds 1946	73,203,000
5½% Debenture Bonds 1943	99,507,400
6% Convertible Bonds 1925	5,951,100
4½% Convertible Bonds 1933	3,723,200
4% Convertible Bonds 1936	2,589,000
Total Funded Debt	$272,944,700
Dividend Payable*	$19,831,268
Accounts Payable and Accrued Liabilities Not Due	42,642,924
Reserve for Employees' Benefit Fund	5,940,182
Reserve for Depreciation and Contingencies	79,152,148
Surplus (Including Capital Stock Premiums)	142,650,674
Total	$1,463,257,381

*Paid October 15, 1924.

Bell System Balance Sheet—September 30, 1924

(All Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,187,545,350
Supplies, Tools, etc.	65,022,583
Stocks and Bonds	150,980,175
Receivables	93,715,286
Cash and Temporary Cash Investments	137,375,491
Total	$2,634,638,885

Liabilities

Capital Stock (Including Installments)	
Common—	
American Tel. and Tel. Company	$900,095,485
Associated Companies	72,671,143
Preferred	
Associated Companies	100,607,747
Total Capital Stock	$1,073,374,375
Funded Debt	
Mortgage Bonds (Associated Companies)	161,537,200
Collateral Trust Bonds	161,937,200
Convertible Bonds and Notes	12,344,100
Debentures and Notes	99,628,400
Total Funded Debt	$759,204,174
Bills Payable	180,217
Total Capital Liabilities	$1,832,758,766
Accounts Payable	47,684,220
Accrued Liabilities Not Due	69,702,707
Reserve for Employees' Benefit Fund	20,460,137
Surplus and Reserves	664,033,055
Total	$2,634,638,885

[fol. 3779] DEP. EX. 105

$100,000,000

(Total Issue)

American Telephone and Telegraph Company

Twenty-year sinking fund 5½% gold debenture bonds

Dated November 1, 1923. Due November 1, 1943

Issued under Indenture dated November 1, 1923, Bankers Trust Company, New York, Trustee

Interest payable May 1, and November 1 in New York or Boston

Redeemable in whole or in part at the option of the Company at 110% and accrued interest on any interest date on or prior to May 1, 1941; thereafter at 100 and accrued interest.

A Sinking Fund of $1,000,000 annually is to be set aside in semi-annual installments beginning May 1, 1924, such Fund to be used in purchasing Debentures of this issue if obtainable at not exceeding 105% and accrued interest; otherwise, to be used for capital expenditures.

Coupon Debentures in Denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable.

H. B. Thayer, Esq., President of the American Telephone and Telegraph Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Purpose of issue.—The proceeds of these Debentures are to be used to retire $40,000,000 Five-Year 6% Notes, due February 1, 1924, and to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. This is the first issue of long term obligations made by the American Telephone and Telegraph Company since 1916, and, in effect, replaces $90,000,000 of

short-term 6% notes (including $50,000,000 of Three-Year Notes paid last year), thereby effecting a saving of $450,000 annually in interest charges.

Equity.—Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially owing to the large amount of capital stock issued. On December 31, 1920, the Company's funded debt aggregated $317,429,000, or 42% of its total capital liabilities, while the capital stock aggregated $442,825,400. After giving effect to the issuance of these Debentures and to the retirement of $40,000,000 6% Notes due February 1, 1924, the funded debt will aggregate approximately $280,000,000, or less than 28% of total capital liabilities, with capital stock (including installments) outstanding in the amount of over $747,000,000. Thus funded debt, even after giving effect to this financing, will have decreased by $37,000,000, whereas capital stock has increased by over $300,000,000.

Earnings.—The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and net income during the past ten years have been as follows:

Year ended December 31	Net earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1913	$40,576,746	$7,656,656	$32,920,090	5.3
1914	40,557,977	8,223,163	32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3

During this ten-year period, the Company's net earnings averaged more than 4½ times interest charges, and in each one of these years they have been more than 3½ times interest charges. For the year 1923, it is estimated that net earnings available for interest will be about $95,000,000, or nearly seven times the annual interest charges on the Company's funded debt to be outstanding after these De-

bentures have been issued and the $40,000,000 Notes due February 1, 1924, have been retired.

Dividend record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 42 years. For approximately 15 years, ended in 1921, the rate was $8 per share annually, and since that year the dividend rate has been $9 per share annually.

Provisions.—In the Indenture under which these Debentures are to be issued, the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures as above stated, or ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect to the collateral securing the above-mentioned 5% Bonds of 1946.

Assets.—The total assets of the American Telephone and Telegraph Company are carried on its books at more than $1,223,000,000. Stocks and bonds of, and advances to, associated and affiliated companies, at valuations which are distinctly conservative, amount to more than $980,000,000 less than $262,000,000 of which are pledged. The Company's long distance telephone plant, including nearly 1,200,000 miles of toll wire, telephone instruments and real estate, have a book cost of over $164,000,000, and are free from lien.

The above debentures are offered for subscription, subject to issue as planned and approval of legality by counsel, at 98½% and interest, to yield 5⅝%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Monday, November 5,

1923. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amount due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds, on November 15, 1923, against delivery of J. P. Morgan & Co. Interim Receipts, exchangeable for definitive Debentures when received from the Company.

The American Telephone and Telegraph Company Five-Year 6% Notes, due February 1, 1924, with final coupon attached, will be accepted in payment of allotments on the date specified, at 100.24406 and accrued interest, equivalent to a 4¾% interest basis from such date to February 1, 1924.

J. P. Morgan & Co. Kuhn, Loeb Co. Kidder, Peabody & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, November 3, 1923.

[fol. 3780] American Telephone and Telegraph Company

Telephone and Telegraph Building

195 Broadway

H. B. Thayer, President

New York, November 2, 1923.

Messrs. J. P. Morgan and Co., 23 Wall Street, New York, N. Y.

Dear Sirs: In connection with the $100,000,000 Twenty-Year Sinking Fund 5½% Gold Debenture Bonds, of the American Telephone and Telegraph Company, I beg to give you the following information regarding the business of the Company and this issue of Debentures:

The proceeds of these Debentures are to be used to retire $40,000,000 of Five-Year 6% Notes due February 1, 1924, and to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. This is the first issue of long-term obligations made by the American Telephone and Telegraph Company since 1916, and, in effect, replaces $90,000,000 of short-term 6% notes (including $50,000,000 of Three-Year Notes paid last

year) with Twenty-Year 5½% Debentures, thereby effecting a saving of $450,000 annually in interest charges.

The Debentures are to be issued under an Indenture with Bankers Trust Company, New York City, as Trustee, in which Indenture the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by pledge with the Trustee under the Indenture under which these Debentures are issued of stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations set forth in the Indenture with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge with the Trustee as above stated, or secure them ratably with the other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral required so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946 (now secured by stocks of New England Telephone and Telegraph Company, New York Telephone Company, Southern Bell Telephone and Telegraph Company, Northwestern Bell Telephone Company and The Pacific Telephone and Telegraph Company). The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the Company's above-mentioned 5% Bonds of 1946.

The Indenture will provide for sinking fund payments to a trustee at the rate of $1,000,000 annually, payable in equal semi-annual installments beginning May 1, 1924, such payments to be used in purchasing Debentures of this issue if obtainable at not exceeding 105% and accrued interest; otherwise to be used for capital expenditures against which no obligations of the Company may be issued.

The total assets of the American Telephone and Telegraph Company are carried on its books at more than $1,223,000,000. Stocks and bonds of, and advances to, associated and affiliated companies, of valuations which are distinctly conservative, amount to more than $980,000,000, less than $262,000,000 of which are pledged under indentures

securing collateral trust bonds. The Company's long distance lines, telephone instruments and real estate, have a book cost of over $164,000,000, and are free from lien.

Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due to the issuance of large amounts of capital stock during 1921 and 1922. On December 31, 1920, the Company's funded debt amounted to $317,429,000, or 42% of its total capital liabilities, and capital stock was outstanding in the amount of $442,825,400. After giving effect to the issuance of these Debentures and to the retirement of $40,000,000 6% Notes, due February 1, 1924, funded debt will be approximately $280,000,000, or less than 28% of total capital liabilities, with capital stock (including installments) outstanding in the amount of over $747,000,000. Thus funded debt, even after giving effect to this financing, will have decreased by $37,000,000, whereas capital stock has increased by over $300,000,000.

The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and net income during the past ten years have been as follows:

Year ended December 31	Net earnings available for interest	Interest	Net income	Number of times interest was earned
1913	$40,576,746	$7,656,656	$32,920,090	5.3
1914	40,557,977	8,223,163	32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3

During this ten-year period net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have been more than 3½ times interest charges. For the year 1923, it is estimated that net earnings available for interest will be about $95,000,000, or nearly seven times the annual interest charges on the Company's funded debt to be outstanding after these

[fol. 3781] Debentures have been issued and the $40,000,000 Notes due February 1, 1924, have been retired. It should be noted that the earnings statements of the Company do not include its equity in the undivided surplus earnings of its Associated Companies.

Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 42 years. For approximately fifteen years, ended in 1921, the rate was $8 per share annually; since then, $9 per share per annum has been paid. During this entire period, net income in each year has been sufficient to meet the dividend paid and leave a balance for surplus.

The American Telephone and Telegraph Company is the parent Company of the Bell Telephone System, owning directly or indirectly about 90% of the voting stock of its 25 associated operating companies, and nearly all the voting stock of Western Electric Company, Incorporated, which serves as the manufacturing, supply and warehousing organization of the Bell System. The American Telephone and Telegraph Company is more than a holding company in the ordinary sense; it is the central organization in the Bell System, owning and operating the long-distance telephone plant including nearly 1,200,000 miles of toll wire, which link together the properties of the local operating companies and make possible a telephone service reaching every part of the United States. Under contract with its Associated Companies, it furnishes and maintains the telephone instruments used by them and performs for these companies certain other services in the fields of research, engineering, operation, finance, accounting, etc., all essential for their operation and continued success. The Company owns, controls or is licensed under about 7,000 United States patents and applications, covering every phase of telephone business, which assure the Bell System's continued predominance in the field of telephony. Finally, the Company serves as a financing agency for the Bell System, obtaining through the sale of its own bonds and stock, the proceeds of which are loaned to its Associated Companies or used to acquire their securities, much of the capital necessary to finance the extension and development of the telephone service throughout the country.

The Bell Telephone System, at the end of September, 1923, comprised over 14,700,000 telephone stations of which more than 10,000,000 were owned by the Associated Companies and the remainder by their connecting companies. More than 800,000 stations will be added to the System during the current year. The telephone business has grown steadily, in times of depression as well as in times of prosperity, in response to a continuous increase in demand by the public for service, as well as to the increase in population. The System depends upon no single industry, community or class of population for its business; a service is provided for millions of homes, and for every phase of the nation's industry. The steady demand for the extension of this service is proof that it is essential and worth much more to the subscriber than it costs him. There is no public utility and there are few business enterprises that can face the future with more confidence than the companies comprising the Bell System, of which the American Telephone and Telegraph Company is the parent Company.

The Bell Telephone System has followed conservative financial policies during its entire history. Full maintenance of the property, adequate provision from current earnings for depreciation and obsolescence, dividend payments at all times less than the actual profits earned, the investment in property of all surplus earnings and unexpended reserves, and the issue of capital stock at par or at a premium either directly or through convertible bonds, have all contributed to the maintenance of a high credit standing which has made possible financing at reasonable rates.

The capital obligations are conservative. The capital stock and obligations of the Bell System outstanding in the hands of the public at September 30, 1923, were approximately $1,563,000,000. Of this total over $883,000,000, or more than 56%, was represented by capital stock. Over $747,000,000 of this latter amount was capital stock of the American Telephone and Telegraph Company; the remainder being common and preferred stocks of the Associated Companies, much of which is held locally by telephone subscribers and employees. The book cost of the net assets used in the business and devoted to earning interest and dividends on these outstanding securities, amounts to over $2,193,000,000, or more than 140% of the aggregate amount of securities on which interest and dividends must

be paid. The difference between net assets and total capital obligations, about $630,000,000, represents the combined surplus and reserves of the American Telephone and Telegraph Company and of the Associated Companies, which contribute in a very large measure to the great financial strength of the Bell System. The accumulated surplus and reserves of the System are invested in the properties of the companies, and to that extent it is unnecessary to obtain new capital for the business. Consequently, even with a relatively low rate of earnings on the telephone property used in the service of the public, it is possible to meet the interest and dividend requirements of the System, with the margin of surplus earnings necessary to give confidence and to attract new investments of capital.

The Twenty-Year Sinking Fund 5½% Gold Debentures are to be limited to the present issue of $100,000,000 Bonds. They are to be dated November 1, 1923, are to mature November 1, 1943, and are to bear interest at the rate of 5½% per annum, payable semi-annually May 1 and November 1 in each year, at the office or agency of the Company in New York City or in Boston, at the option of the holder. The Debentures are to be issued in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000, the coupon Debentures and the registered Debentures and the several denominations of each to be interchangeable. The Debentures may be redeemed at the option of the Company, in whole or in part, upon sixty days' notice, on any interest date at the following prices with accrued interest: If on or prior to May 1, 1941, at 110%, and if subsequent to May 1, 1941, at par.

Application for the listing of these Debentures on the New York Stock Exchange will be made by the Company in due course.

Yours very truly,

H. B. Thayer, President.

[fol. 3782] American Telephone and Telegraph Company
Balance Sheet—September 30, 1923

Assets	
Stocks of Associated Companies	$742,534,829
Bonds and Notes of and Advances to Associated Companies	154,391,704
Stocks and Notes of and Advances to other Companies	84,028,084
Telephone Plant and Equipment	149,768,905
Real Estate, Furniture, and Fixtures	14,865,822
Bills and Accounts Receivable	11,468,344
Cash and Temporary Cash Investments	66,098,495
Total	$1,223,156,183

Liabilities	
Capital Stock and Installments	$747,864,238
4% Collateral Trust Bonds 1929	78,000,000
5% Collateral Trust Bonds 1932 (Western Tel. & Tel. Co.)	9,970,000
5% Collateral Trust Bonds 1946	74,034,500
6% Convertible Bonds 1925	10,677,700
4½% Convertible Bonds 1933	6,433,300
4% Convertible Bonds 1936	2,589,000
6% Five Year Gold Notes 1924	38,183,500
Total Funded Debt	$219,888,000
Dividend Payable*	16,437,584
Accounts Payable and Accrued Liabilities Not Due	29,267,011
Reserve for Employees' Benefit Fund	4,953,743
Reserve for Depreciation and Contingencies	71,481,390
Surplus (including Capital Stock Premiums)	133,264,217
Total	$1,223,156,183

* Paid October 15, 1923.

Bell System Balance Sheet September 30, 1923

(All inter-company duplications excluded)

Assets

Telephone Plant	$1,903,340,346
Supplies, Tools, etc.	57,573,574
Stocks and Bonds	150,293,329
Receivables	106,837,326
Cash and Temporary Cash Investments	82,341,836
Total	$2,300,386,411

Liabilities

Capital Stock (including Installments)	
Common	
American Tel. & Tel. Co.	$747,864,238
Associated Companies	62,479,633
Preferred	
Associated Companies	73,091,147
Total Capital Stock	$883,435,018
Funded Debt	
Mortgage Bonds—(Associated Companies)	$408,505,225
Collateral Trust Bonds	161,980,500
Convertible Bonds and Notes	19,925,000
Debentures and Notes	71,870,800
Total Funded Debt	$662,281,525
Bills Payable	17,330,387
Total Capital Liabilities	$1,563,046,930
Accounts Payable	39,877,955
Accrued Liabilities Not Due	66,921,224
Reserve for Employees' Benefit Fund	18,515,569
Surplus and Reserves	612,024,733
Total	$2,300,386,411

[fol. 3783] DEP. EX. 106

$150,000,000

American Telephone and Telegraph Company

Thirty-five Year 5% Gold Debentures

Dated February 1, 1930. Due February 1, 1965

Issued under Indenture dated February 1, 1930, The First National Bank of the City of New York, Trustee

Interest payable February 1 and August 1 in New York City

Redeemable, at the option of the Company, as a whole but not in part, upon 60 days' notice, on any interest date, at the following prices and accrued interest: on or prior to August 1, 1961, at 110%; thereafter, at 100%

Coupon Debentures in denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable

Walter S. Gifford, Esq., President of the American Telephone and Telegraph Company, has furnished us with the following statement regarding this issue:

Purpose of issue.—This issue of Debentures will provide funds required by the Bell System for additions and betterments and for other capital expenditures.

Assets and equity.—The assets of the American Telephone and Telegraph Company on September 30, 1929, after deducting current liabilities, were carried on its books at more than $2,378,000,000. Investments (at cost) in its associated and affiliated companies amounted to $2,015,000,000 and in its telephone plant and equipment to $324,000,000. All the property of the Company is free from lien, except certain stocks and bonds pledged to secure approximately $80,000,000 Collateral Trust Bonds. After giving effect to the issue of these Debentures, the Company's long term debt will be less than $670,000,000, whereas capital stock (including paid-up portions of stock payable in installments) will be in excess of $1,400,000,000 par value.

Thus funded debt will comprise less than one-third of the Company's total capital liabilities.

Earnings.—The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and its net income during the five years ended December 31, 1928 were as follows:

Years Ended December 31	Net Earnings Available for Interest	Interest Charges	Net Income	Number of Times Interest was Earned
1924	$107,619,362	$16,573,041	$ 91,046,321	6.4
1925	129,036,334	21,631,288	107,405,046	5.9
1926	138,931,387	21,940,986	116,990,401	6.3
1927	*150,383,895	21,768,985	128,614,910	6.9
1928	165,268,049	22,097,558	143,170,491	7.4

*Does not include special non-recurring dividend of $47,938,865 received from Western Electric Company, Inc.

During this five-year period, net earnings available for interest averaged more than 6½ times interest charges. It is estimated that for the year 1929 net earnings available for interest were in excess of $193,000,000, or more than 7 times the estimated interest charges during that year.

Dividend record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 48 years. Since 1921 the annual rate has been $9 per share.

Provisions of Indenture.—In the Indenture under which these Debentures are to be issued, the Company is to covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations to be set forth in said Indenture) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge of securities as above stated, or secure them ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year 5% Collateral Trust Gold Bonds due 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corre-

sponding provisions in respect of the collateral securing the above-mentioned 5% Bonds due 1946.

The above debentures are offered for subscription, subject to the conditions stated below, at 99½%, less an amount equal to interest at the rate of 5% on face amount from date of payment to February 1, 1930.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Monday, January 13, 1930, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. All subscriptions will be received subject to the due issue of the Debentures as planned, and to approval by counsel of the form and validity of the related documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about January 28, 1930) will be stated in the notices of allotment. Temporary Debentures, exchangeable for definitive Debentures when received, are to be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder, Peabody & Co. First National Bank. The National City Company. Bankers Company of New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, January 13, 1930.

[fol. 3784] DEPOSITION EXHIBIT #108

Tabulation Prepared and Testified to by Witness Uhrig

Jan. 1932.

Issue of November 1, 1923:

$100,000,000—20 yr.	5½% Gold Debentures
Sold to Public	98.50
Total Discount and Expensive	$5,313,701.51

Issue of January 1, 1925:

$125,000,000—35 yr.	5% Gold Debentures
Sold to Public	95.00
Total Discount and Expense	$10,865,085.57

Issue of February 1, 1930:	
$150,000,000—35 yr.	5% Gold Debentures
Sold to Public	99.50
Total Discount and Expense	$5,525,527.76

[fol. 3785] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 110

Bell Telephone Securities

Reference Tables and Descriptions For the Use of Investors, Investment Houses and Bankers, with a Brief Introductory Statement of the Organization and Financing of the American Telephone and Telegraph Company and Associated Companies

1931

Bell Telephone Securities Company, Incorporated

195 Broadway, New York

April 15, 1931

[fol. 3786] Prefatory Note

This pamphlet contains information about the Bell Telephone System, the greater part of which has appeared in past annual reports and statements to the stockholders of the American Telephone and Telegraph Company and its Associated Companies. The financial data are substantially as published in such annual reports and statements, except that certain consolidations and regroupings have been made in order to present the figures in such form that comparisons may be made over a series of years.

The information is complete through December 31, 1930, except in cases where later dates are indicated for certain special items. It is presented in this condensed form for the convenience of investors, investment houses and bankers.

The Bell Telephone Securities Company was organized by the American Telephone and Telegraph Company to

advise intending investors and to facilitate their transactions in Bell Telephone securities. The A. T. & T. Co. owns all the stock of the Securities Company.

Holders of telephone securities and telephone subscribers generally are invited to avail themselves of the facilities of this Company.

Bell Telephone Securities Company.

195 Broadway, New York, April 15, 1931.

Part I

Organization and Financing of the Bell System

The American Telephone and Telegraph Company owns directly or indirectly more than nine-tenths of the voting stock of the twenty-four companies associated with it in the Bell System. These companies operate telephone properties throughout the United States. The A. T. & T. Co. also owns and operates the long-distance lines which con- [fol. 3787] nect the network of wires of these different operating companies. This combination, known as the Bell System, forms an inter-communicating system of 15,682,000 telephones with which are connected the lines of 7,163 other companies and 29,281 rural lines. Altogether there are in the Bell System and connected with it, 20,098,000 telephones scattered over all parts of the United States, so that, practically speaking, and within the range of these facilities, any one anywhere can at any time pick up a telephone and talk to any one else, anywhere, quickly and economically, whether they are on Bell-owned lines or on the lines of connecting companies, it being the aim of the management to effect a single, uniform, nation-wide service. Telephone service is also provided to Canada, Cuba and Mexico by means of wires, and by radio telephone to most of the countries of Europe, to certain countries in South America, and to Australia, so that 91 per cent. of the world's telephones can now be reached from any Bell System telephone.

The business of the Bell System has both stability and growth. Its stability depends upon no single section or industry. The interests that it serves are as diversified and as widespread as the country itself. The growth of the System is based not only upon the growth of the population in the country but also upon the increase in the tele-

phone habit, so that the use of the telephone is increasing more rapidly than the growth of the population. During the last ten years the population of the United States increased approximately 15 per cent., while the number of telephones in and connected with the Bell System increased nearly 60 per cent., and the number of telephone calls per day 97 per cent. In order to meet this growing demand, the construction expenditures of the Bell System during the last five years have been more than $2,300,000,000.

Another indication of the growth of the telephon industry in the United States is the increase in the plant investment of the Bell System from about $181,000,000 in 1900 [fol. 3788] to more than $4,043,000,000 in 1930. During no year has there been a cessation in the public's demand for more telephone facilities. During each of the last nine years net additions to telephone plant have been in excess of the total amount of telephone plant in the Bell System in 1900. The need for additions to telephone facilities on a substantial scale promises to continue in the future.

The property of the Bell System, consisting of buildings, switchboards, pole lines, cables and the thousand-and-one things that go to make up the telephone plant, is maintained at a high standard of operating efficiency and proper and adequate charges are made currently for depreciation expense in order to provide against the loss of investment when property is retired from service.

A continuous and growing demand for its service and the immense and growing physical plant are two fundamental elements in the security of the investment in the Bell System. Two other elements, equally if not more important, are the organization of the System and its financial policy.

Organization of the Bell System

The organization of the Bell System has grown out of American conditions, and parallels in many respects that of the nation.

Regional operating companies, covering one or more states, are responsible for telephone service within their territories. In this way community needs and requirements are best met and, so far as practical, responsibility for operation is localized. The territories of the operating companies are shown on the map on page 22.

[fol. 3789] These territorial operating companies are linked together for nation-wide service by long-distance lines constructed and owned by the A. T. & T. Co.

The unified operation and co-ordination essential for nation-wide telephone service are provided by the service and financial relationship of the A. T. & T. Co. to each of these regional operating companies.

The A. T. & T.'s financial interest in the Western Electric Company, Inc., insures an adequate supply of the highest grade of the necessary intricate telephone apparatus at reasonable prices, as well as full consideration of service needs in its manufacture.

Progress in the extent, quality and economy of telephone service is the especial duty of the general staffs of the A. T. & T. Co. and its Bell Telephone Laboratories, comprising scientists and men skilled in all phases of telephone operation and management. These staffs are available at all times for advice and assistance to the operating companies, and are engaged constantly in devising new methods of operation, and in the invention, development and testing of new types of equipment.

This form of organization is adapted to care for the constant increase in size of the System and to permit of effective management; to respond to the local requirements of the different sections of the country; to insure uniform methods of operation required in handling inter-regional business; to secure all possible economies in the cost of equipment, in maintenance and in methods of operation; and to continue to promote improved service through new developments in the art of telephony. The organization is, in a sense, unique and distinctively American in character.

Financial Policy

The policy of the A. T. & T. Co. set forth in a recent Annual Report follows:

"The very nature of the telephoen business necessitates [fol. 3790] a single inter-connected system. Such a system is provided by the American Telephone and Telegraph Company and it Associated and Connecting Companies.

The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust. Its duty is to provide the American public with adequate, dependable and satisfactory telephone

service at a reasonable cost. To attain this end, it is the policy of the Company to pay only reasonable regular dividends and, for part of the new capital needed, to offer from time to time new stock to its stockholders on favorable terms, for it believes this method of financing will provide the money needed for the business cheaply and with more certainty in good times and bad than any other.

The safety of principal and regular dividends have been the compelling motives that have led to the wide-spread ownership of the stock of the Company * * *. This nation-wide ownership of the American Telephone and Telegraph Company means ownership of the Bell System, for, taking the associated operating telephone companies as a group, the American Telephone and Telegraph Company owns 93 per cent of their common stock, and in the case of the Western Electric Company, Inc., it owns 98⅓ [fol. 3791] per cent of the stock. Dividends paid to the American Telephone and Telegraph Company by these companies, together with profits earned from its long-distance lines, are used for the payment of the regular dividends to the American Telephone and Telegraph Company stockholders and the profection of their investment. There is, in effect, one profit paid by the System and that profit is not and should not be large. The aim of the management—

Net Earnings Per Share of A. T. & T. Stock Available for Dividends

Year	Net Earnings per Share	Dividends paid per Share
1922	$11.14	$9.00
1923	11.35	9.00
1924	11.31	9.00
1925	11.79	9.00
1926	11.95	9.00
1927	11.76*	9.00
1928	12.11	9.00
1929	12.67	9.00
1930	10.44	9.00

*Does not include special and non-incurring dividend from the Western Electric Co., Inc.

and it is the only aim that will protect in the long run the safety of the investment of the hundreds of thousands of stockholders—is to continue to furnish the best possible telephone service at the least cost to the public. Extra or special dividends are entirely inconsistent with this aim and would be unsound. Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management."

The organization is set up to guarantee progress and the policy is designed to deserve that public support without which even the best service cannot provide safety for investments and stability to a company.

Bell System Bonds

At the end of 1930 the funded debt of the A. T. & T. Co. was less than 15 per cent. of its net assets, while for the Bell System as a whole, as indicated by the chart on page 10, the funded debt was less than 22 per cent. The mortgage debt of the System was under 14 per cent. of the book value of the physical property. For the past five years net earnings of the A. T. & T. Co. available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges (also after making adequate provision for depreciation and Federal taxes) more than 4 times.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds have a ready market; they are bought and sold daily on [fol. 3792] the stock exchanges in the large cities of the United States and to some extent abroad.

. . . . . .

A. T. and T. Stock

* * * * * * *

The total par value of A. T. & T. stock outstanding on December 31, 1930, was $1,795,651,200, for which the Company had received $2,054,782,802, the difference representing capital stock premiums which have gone into the Company's properties as part of the equity behind all the stock.

More than 100,000 of the stockholders are Bell System employees. In addition, more than 300,000 employees of Bell System companies and their subsidiaries are now purchasing stock in installments under the Employees' Stock Plan.

A. T. & T. Earnings and Dividends

The earnings of the A. T. & T. Co. come mainly from dividends on stocks of the Associated Companies and the Western Electric Company, interest on funds advanced to them, interest on temporary investments, payments by the Associated Companies for services, and revenues from the operations of its long-distance lines. During the past 31 years the net earnings available for dividends have averaged more than $10 a share per year.

For more than 49 years the A. T. & T. Co. and its predecessor have paid dividends to the public of not less than $7.50 a share per year. For approximately 15 years ending in 1921 payments were $8 a share. Since then, dividends have been at the rate of $9 a share, payable quarterly on January, April, July and October 15th, to stockholders of record at a date which is usually the 20th day of the preceding month.

[fol. 3793] Year after year the earnings of the A. T. & T. Co. remaining after the payment of dividends to stockholders and the capital stock premiums received have been kept in the business and invested in new telephone property which has increased the usefulness and earning capacity of the entire Bell System.

The high market rating of A. T. & T. stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings and the conservative financial policy of the management.

* * * * * * *

Part II

Financial Statements and Statistics of the A. T. & T. Co. and the Bell System

The tables and charts in this section show the growth and financial structure of the American Telephone and Telegraph Company and its Associated Companies, comprising the Bell System, which own and operate the Bell telephone exchanges and toll lines in the United States. (See map, page 22.) The condensed balance sheets of the Bell System are consolidations of the figures reported by the component corporations, with intercorporate duplications eliminated; likewise, the income statements of the System show the results of operation after excluding duplications on account of intercompany transactions. The accounts of the Western Electric Company, Inc., The Bell Telephone Company of Canada, and of subsidiary and connecting companies, investments in which are held by the A. T. & T. or its Associated Companies, are not included in these financial statements; however, the investments in these companies are included in the item "Investments" in the System balance sheet, while dividends and interest received from them appear on the System income statement as part of "Non-Operating Revenues—Net." Balance sheets and income [fol. 3794] statements of the Bell System follow those of the A. T. & T. Co.

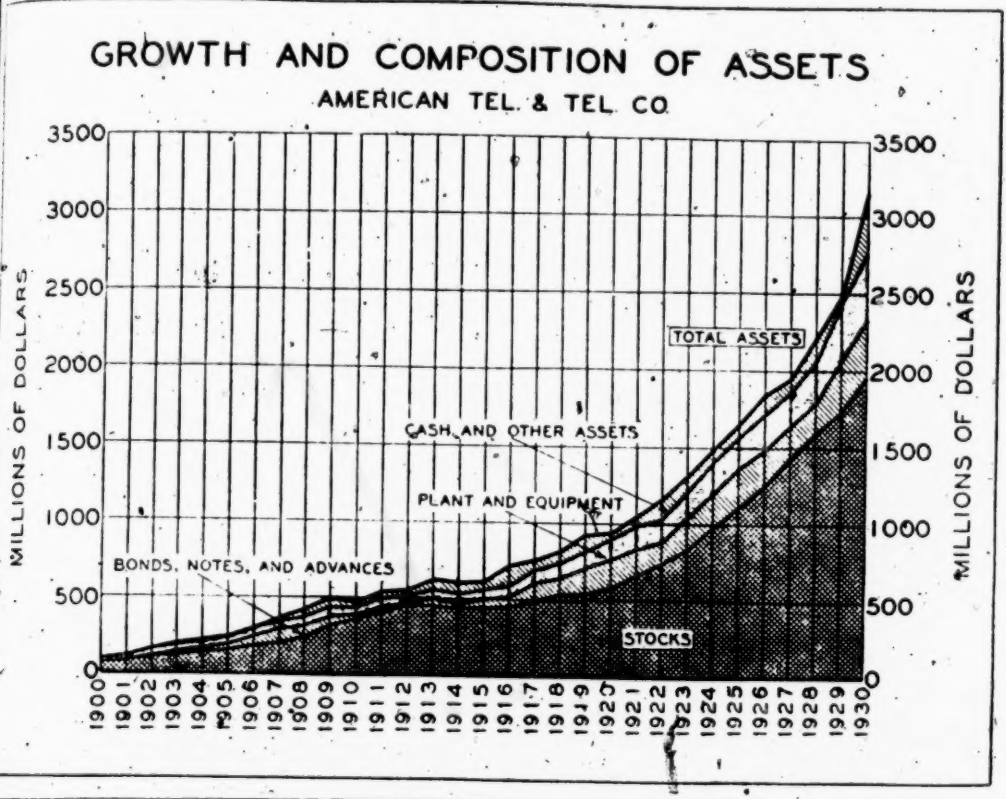
The A. T. & T. Co. has supplied most of the capital for the development of the Bell System and the growth of the Associated Companies. Accordingly, its capital obligations represent more than 70 per cent. of the total capital obligations of the System. The composition of assets of the A. T. & T. Co. is notably different, however, from that of the System as a whole. In the case of the parent company, 73 per cent. of the total assets consists of securities of and advances to Associated and other Companies, these advances being furnished to the Companies to provide the necessary funds for extensions and improvements in the intervals between their permanent financing. On the other hand, in the case of the System as a whole, telephone plant accounts for nearly 81 per cent. of all assets.

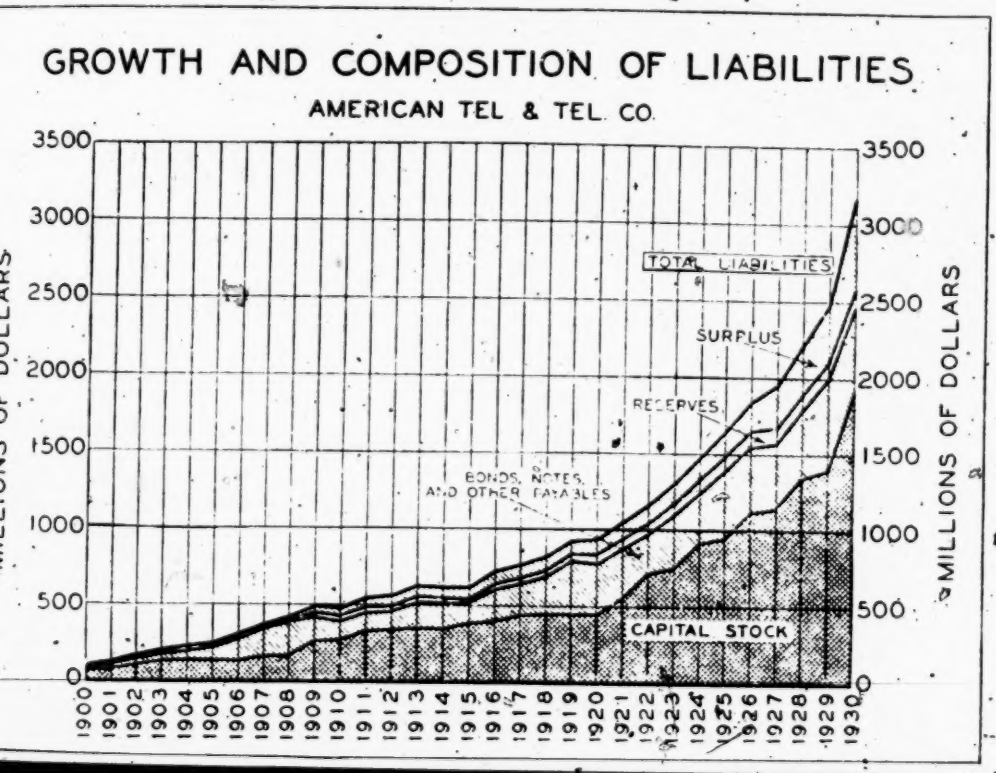
The great preponderance of fixed plant in the assets of the Bell System indicates the fundamental difference which exists between the telephone industry and many other types

of business. The Bell System is engaged in furnishing telephone service and has no manufactured product to sell, no items of merchandise to dispose of, and no investment in materials in process of manufacture. In short, the telephone business does not call for a considerable volume of working capital. That the cash and temporary investments of the System fluctuate from year to year is due entirely to the fact that advance financing necessary to cover new construction has been accomplished at varying times, thus bringing about a variation in the cash reserves on hand at the close of different years.

(Here follows side folio 3795.)

Charts


GROWTH AND COMPOSITION OF ASSETS
AMERICAN TEL. & TEL. CO.
MILLIONS OF DOLLARS
3500
3000
2500
2000
1500
1000
500
0
TOTAL ASSETS
CASH AND OTHER ASSETS
PLANT AND EQUIPMENT
BONDS, NOTES, AND ADVANCES
STOCKS
1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

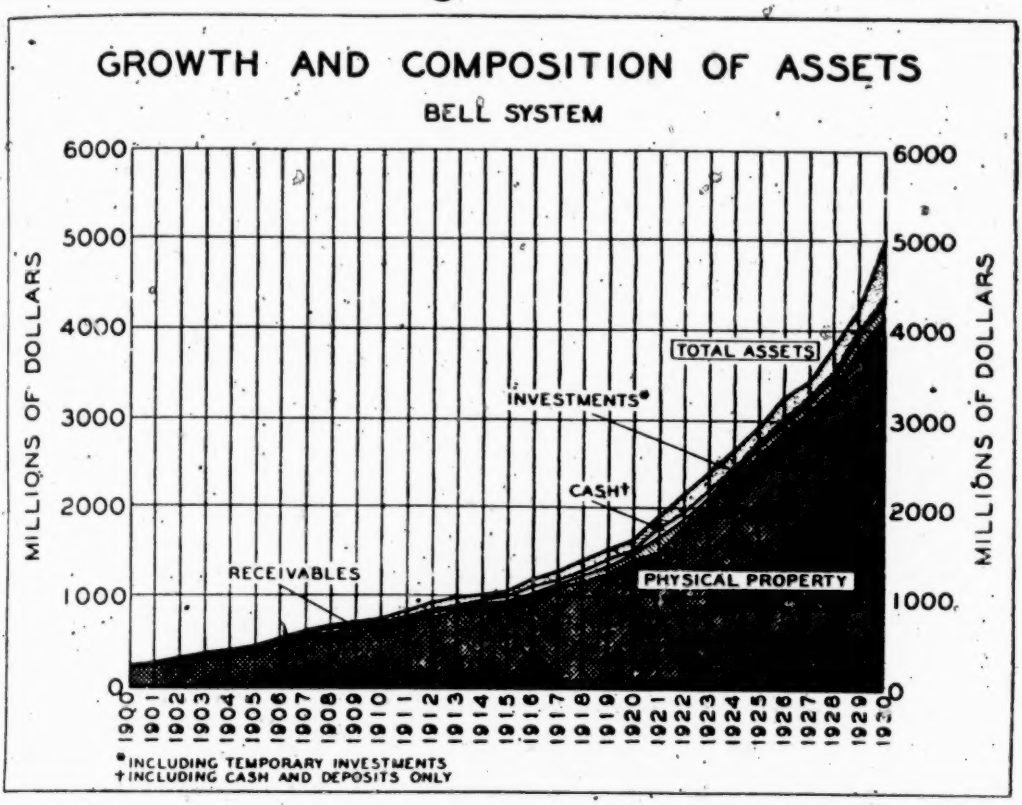

GROWTH AND COMPOSITION OF LIABILITIES
AMERICAN TEL & TEL. CO.
MILLIONS OF DOLLARS
3500
3000
2500
2000
1500
1000
500
0
TOTAL LIABILITIES
SURPLUS
RESERVES
BONDS, NOTES, AND OTHER PAYABLES
CAPITAL STOCK
1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

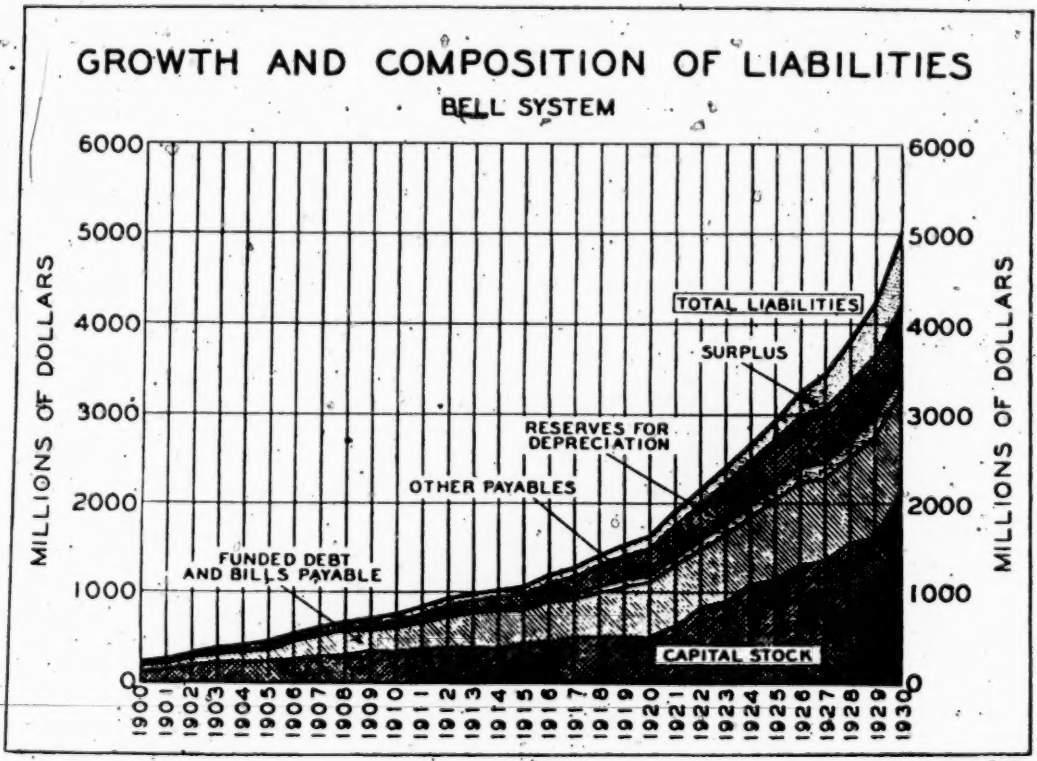
[fol. 3796] The statements below show the assets and liabilities and earnings of the A. T. & T. Co. The Company's surplus shows growth commensurate with other items on its balance sheet. In the last thirty years, surplus, reserved and capital stock premiums have grown from $20,000,000 to $704,000,000. These amounts have been regularly invested directly or indirectly in productive plants of the Bell System. The surplus has not been capitalized by stock issues. The earnings of the parent company are derived mainly from two sources: (1) dividends and interest received on account of its investment in and advances to the Associated and other Companies and (2) telephone revenues.

(Here follows side folio 3797)

DEFENDANT'S EXHIBIT #110

Charts





P. 17:

[fol. 3798] Bell System Statistics

[redacted] c. 31, 1930.

Number of Telephones:	
Bell Companies:	
Telephones (Manual Service)	10,705,118
Telephones (Dial Service)	4,976,941
Total Bell Companies	15,682,059
Bell Connecting Companies and Lines*	4,416,000
Total	20,098,059
Number of Connecting Companies	7,163
Number of Connecting Rural Lines	29,281

[fol. 3799] Extracts from Exhibit, Deposition Exhibit No. 111

Publication, Bell Telephone Securities, dated April 15, 1930

* * * * * * *

P. 7:

Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management.

* * * * * * *

P. 7: Bell System Bonds

At the end of 1929 the funded debt of the American Company was less than 22% of its net assets. For the Bell System as a whole, the funded debt was less than 27% of

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*Partly estimated.

its net assets, while the mortgage debt of the System was under 15% of the book value of the physical property. For the past five years net earnings of the American Company available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges (also after making adequate provision for depreciation and Federal taxes) more than 4 times.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds have a ready market; they are bought and sold daily on the stock exchanges in the large cities of the United States and to some extent abroad.

P. 8:

[fol. 3800] American Telephone Company Earnings and Dividends

The earnings of the American Telephone and Telegraph Company come mainly from dividends, interest on funds advanced to the Associated Companies, interest on temporary investments, payments by the Companies for services, and revenues from the operations of its long distance lines. The net earnings of the American Company available for dividends have, during the past 30 years, averaged more than $10 a share per year.

P. 9:

For more than 48 years the American Company and its predecessor have paid dividends to the public or not less than $7.50 a share per year. For approximately 15 years ending with the first quarter of 1921, payments were $8 a share. Beginning with July, 1921, payment, dividends have been at the rate of $9 a share, payable quarterly on January, April, July and October 15th, to stockholders of record at a date which is usually the 20th day of the preceding month.

Year after year not only the earnings of the American Company remaining after the payment of dividends to the

stockholders but also the capital stock premiums received have been kept in the business as surplus and reserves. These have been invested in new telephone property which has increased the usefulness and earning capacity of the entire Bell System.

The high market rating of American Telephone stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings and the conservative financial policy of the Bell System.

[fol. 3801] A comparison of the Bell System balance sheets on page 15 with the balance sheets of the American Telephone and Telegraph Company on page 21 shows that the parent company has supplied most of the capital for the development of the System and the growth of the Associated Companies. This is reflected both in the capital liability items of the two balance sheets and in the composition of the assets. Of total System capital liabilities of $2,760,000,000 outstanding in the hands of the public on December 31, 1929, more than $1,925,000,000 or about 70%, represented capital liabilities of the American Telephone and Telegraph Company. Of $1,611,862,252 capital stock of Bell System corporations outstanding with the public, $1,394,495,412 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The long term debt of the System as a whole, outstanding in the hands of the public, amounted to $1,148,539,684, consisting of $530,907,303 American Telephone and Telegraph Company obligations and $617,632,381 Associated Company obligations.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1929, at $3,671,099,689 accounted for nearly 87% of all the System's assets; while in the case of the parent company the item of plant is a relatively minor one among the assets, and $2,065,769,261, or nearly 84%, of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3802] Bell System Telephones, Central Offices and Wire Mileage

Years Ending December 31st	Number of Telephones		
	Bell Companies	Bell Connecting Companies and Lines	Total
1900	835,911	20,000	855,911
1901	1,061,112	47,961	1,109,073
1902	1,317,178	84,021	1,401,199
1903	1,563,941	120,936	1,684,877
1904	1,838,034	167,213	2,005,247
1905	2,284,587	246,337	2,530,924
1906	2,773,547	297,218	3,070,765
1907	3,012,511	826,489	3,839,000
1908	3,176,394	1,188,235	4,346,629
1909	3,522,079	1,620,613	5,142,692
1910	3,933,056	1,949,663	5,882,719
1911	4,351,837	2,280,788	6,632,625
1912	4,803,803	2,652,271	7,456,074
1913	5,254,808	2,878,209	8,133,017
1914	5,584,853	3,073,759	8,658,612
1915	5,584,853	3,074,759	8,658,612
1916	6,545,490	3,348,120	9,893,610
1917	7,081,530	3,508,046	10,539,576
1918	7,201,757	3,864,242	11,065,999
1919	7,739,159	4,056,588	11,795,747
1920	8,333,979	4,267,956	12,601,935
1921	8,914,155	4,466,064	13,380,219
1922	9,514,813	4,535,752	14,050,565
1923	10,406,155	4,593,946	15,000,101
1924	11,242,318	4,664,232	15,906,550
1925	12,035,224	4,685,000	16,720,224
1926	12,816,252	4,758,000	17,574,252
1927	13,726,056	4,639,430	18,365,486
1928	14,524,648	4,672,387	19,197,035
1929	15,414,005	4,682,849	20,096,854

NOTE—There are throughout the United States 7,785 telephone companies and in addition 30,096 rural telephone lines operated mainly on a co-operative basis which have arrangements with the associated Bell companies for the interchange of toll traffic. Data for these connecting companies and connecting rural lines are excluded in all except the columns, "Bell-Connecting Companies and Lines" and "Total Number of Telephones."

[fol. 3803] A study of the capital structure as given in the balance sheets and charts makes clear the major changes in the Company's financial setup during recent years. There has been an increase in the ratio of capital stock (including installments) to total capitalization from 58% at the end of 1920 to 72% at the end of 1929.

[fol. 3804] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 112

Publication, Bell Telephone Securities, Issue of 1929, Dated April 15th

Financial Policy

The policy of the Company was set forth in the Annual Report for 1927 in these words:

"The very nature of the telephone business necessitates a single inter-connected system. Such a system is provided by the American Telephone and Telegraph Company and its Associated and Connecting Companies.

The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust. Its duty is to provide the American public with adequate, dependable and satisfactory telephone service at a reasonable cost. To attain this end, it is the policy of the Company to pay only reasonable regular dividends and, for part of the new capital needed, to offer from time to time new stock to its stockholders on favorable terms, for it believes this method of financing will provide the money needed for the business cheaply and with more certainty in good times and bad than any other.

The safety of principal and regular dividends have been the compelling motives that have led to the widespread ownership of the stock of the Company. * * * This nation-wide ownership of the American Telephone and Telegraph Company means ownership of the Bell System, for, taking the associated operating telephone companies as a group, the American Telephone and Telegraph Company owns 93 per cent. of their common stock, and in the case of the Western Electric Company, Inc., it owns 98⅓ per cent. of the stock. Dividends paid to the American Telephone and Telegraph Company by these companies, together with profits earned from its long-distance lines, are used for the payment of the regular dividends to the American Telephone and Telegraph Company stockholders and the protection of their investment. There is, in effect, one profit paid by the System and that profit is not and should not be large. The aim of the management—and it

is the only aim that will protect in the long run the safety of the investment of the hundreds of thousands of stockholders—is to continue to furnish the best possible telephone service at the least cost to the public. Extra or special dividends are entirely inconsistent with this aim and would be unsound. Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management."

[fol. 3805] The organization is set up to guarantee progress and the policy is designed to deserve that public support without which even the best service cannot provide safety for investments and stability to a company.

* * * * * * *

Year after year not only the earnings of the American Company remaining after the payment of dividends to the stockholders but also the capital stock premiums received have been kept in the business. Furthermore, as the principal stockholder of the Associated Companies, the American Company has a substantial equity in the accumulated surpluses of these companies. These surpluses, together with the reserves of the American Company, are retained in the business, and are invested in telephone property, thereby increasing the usefulness and earning capacity of the entire Bell System.

Bell System Bonds

At the end of 1928 the funded debt of the American Company was less than 18% of its net assets. For the Bell System as a whole, the funded debt was less than 26.5% of its net assets, while the mortgage debt of the System was under 16.5% of the book value of the physical property. For the past five years net earnings of the American Company available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges

(also after making adequate provision for depreciation and Federal taxes) over 4 times.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds, as well as American Telephone stock, have a ready market; [fol. 3806] they are bought and sold daily on the stock exchanges in the large cities of the United States and to some extent abroad.

The high market rating of American Telephone stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings, and the conservative financial policy of the Bell System.

* * * * * * *

Of total System capital liabilities of nearly $2,530,000,000 outstanding in the hands of the public on December 31, 1928, over $1,735,000,000 or 68% represented capital liabilities of the American Telephone and Telegraph Company. Of $1,564,644,118 capital stock of Bell System corporations outstanding with the public, $1,347,561,463 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The long term debt of the System as a whole outstanding in the hands of the public, amounted to $964,783,700, consisting of $388,084,912 American Telephone and Telegraph Company obligations and $576,698,788 of Associated Company obligations.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1928, at $3,275,686,848 accounted for 85% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,789,320,121, or 80%, of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has [fol. 3807] played in financing the growth of the Bell System.

* * * * * * *

A study of the capital structure as given in the balance sheets and charts makes clear the major changes in the Company's financial setup during recent years. There has been an increase in the ratio of capital stock (including installments) to total capitalization from 58% at the end of 1920 to 77% at the end of 1928.

* * * * * * *

The Company's surplus shows growth commensurate with other items on its balance sheet. In the 28-year period surplus and reserves have grown from $20,000,000 to nearly $425,000,000. These have been regularly reinvested directly or indirectly in productive plant of the Bell System. Surplus has not been capitalized by stock issues.

[fol. 3808] EXTRACTS FROM EXHIBITS DEPOSITION EXHIBIT NO. 113

Publication, Bell Telephone Securities, Issue of April 15, 1928

* * * Of total System capital liabilities of nearly $2,280,000,000 outstanding in the hands of the public on December 31, 1927, over $1,525,000,000 or 67%, represented capital liabilities of the American Telephone and Telegraph Company. Of $1,351,939,840 capital stock of System corporations outstanding with the public, $1,142,289,200 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to $919,789,700, consisting of $383,743,900 American Telephone and Telegraph Company obligations and $536,045,800 of Associated Company bonds.

The composition of the assets of the Ssytem as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1927, at $3,013,985,120 accounted for 87% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,639,690,408, or 84% of the total

assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3809] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 114

Bell Telephone Securities, April 15, 1927

The American Telephone and Telegraph Company employs hundreds of experienced engineers, scientific investigators, and specialists, who constitute a general staff. Through its activities wasteful duplication of effort is avoided, and the problems of each Associated Company, involving as they do the efficient and economical expenditure of vast sums of money and the operation of a large and intricate plant, are solved and the results made available to all companies.

Millions of dollars are spent each year in scientific and other forms of research looking to the improvement and development of efficient telephone service. Inventions of a highly refined and intricate character have marked the progress of the telephone industry, and have had to find their place in art or industry made up of many interdependent operations and services. Each new scientific conception, no matter how novel and important, has had to be adapted to the present highly organized system to make it serviceable. It has been and is the work of the general staff to give effective expression to all of the improvements in the telephone art suggested by invention and research, to cope with the managerial problems that arise, and thereby to increase the value and availability of the telephone service.

Some of its members therefore are working on problems of improving and perfecting subways and cables, telephone apparatus, switchboards and buildings and the development of radio telephony; others devote their time to the problems connected with the handling of telephone calls; and still other groups are engaged on problems of finance, accounting, and law, and in the carrying forward of a great

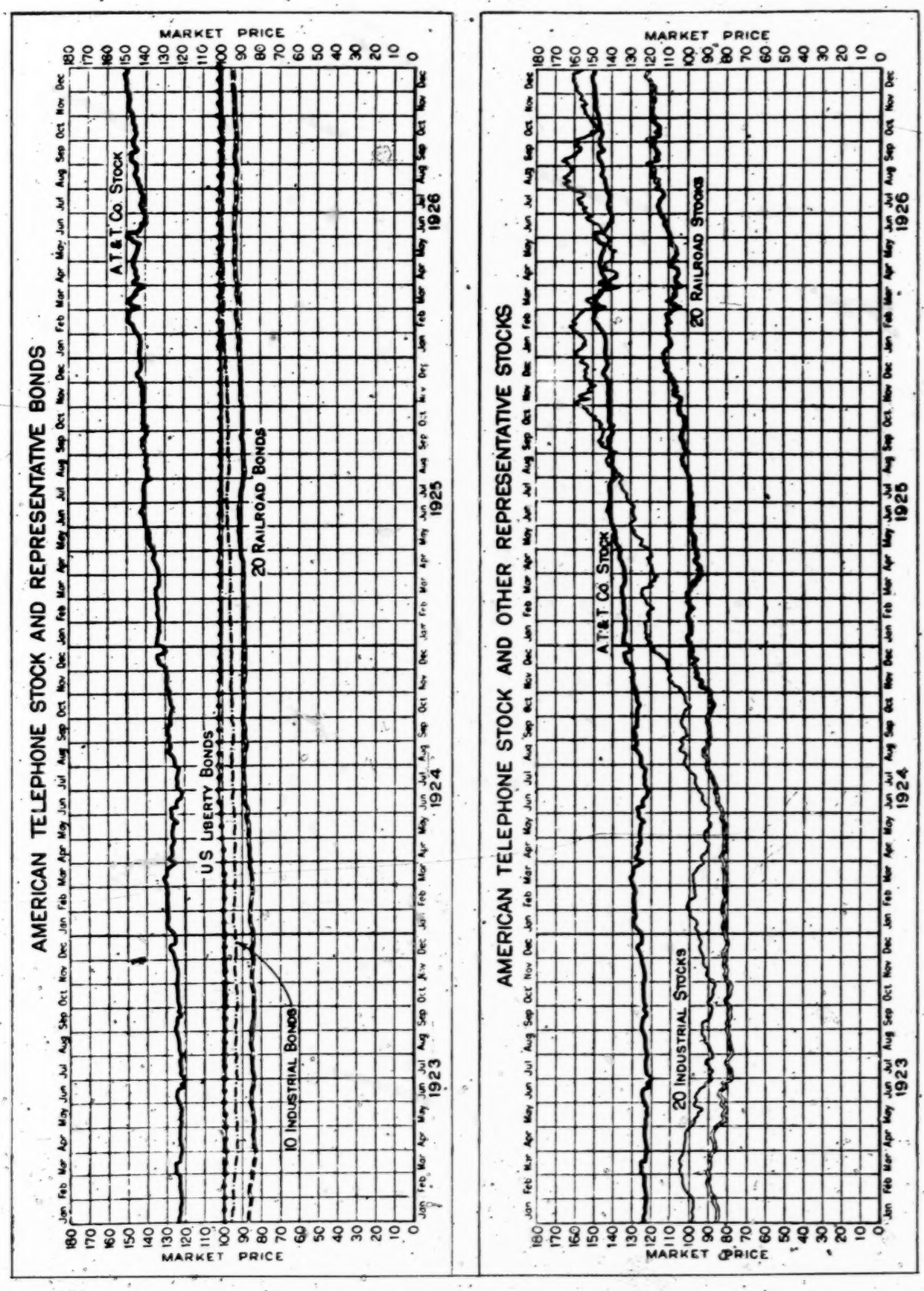
[fol. 3810] number of other necessary functions. Thus it is possible for the Bell System to give the best, the most economical and the most comprehensive telephone service in the world.

The strength and the conservative financial structure of the System become evident when it is pointed out that on December 31, 1926, surplus and reserves of the Bell System were equal to more than 37% of total capital obligations, and that the mortgage debt of the System on the same date was less than 18% and total funded debt less than 30% of net assets.

Year after year not only the earnings of the American Company remaining after the payment of dividends to the stockholders but also the capital stock premiums received have been kept in the business. Furthermore, as the principal stockholder of the Associated Companies, the American Company has a substantial equity in the accumulated surpluses of these companies. These surpluses, together with the surplus and reserves of the American Company are retained in the business, as has been said, and are invested in telephone property, thereby increasing the usefulness and earning capacity of the entire Bell System.

This record of earnings, of dividends, and of financial policy reflects the stability of the telephone industry, and accounts for the high market rating of American Company stock, and the high standing of Bell System bonds.

(Here follows Side Folio 3811)



P. 13 *****Of total System capital liabilities of over $2,235,000,000 outstanding in the hands of the public on December 31, 1926, nearly $1,498,000,000, or 67% represented capital liabilities of the American Telephone and Telegraph Company.

[fol. 3812] Of $1,312,881,184 capital stock of System corporations outstanding with the public, $1,112,796,679 represented capital stock (including installments) of the parent company; the remainder being common, preferred, or capital stock of other Bell System Companies. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to $921,523,000, consisting of $384,950,400 American Telephone and Telegraph Company obligations and $536,572,600 of Associated Company bonds.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1926, at $2,783,023,059 accounted for 85% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,481,151,575 or 80% of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3813] Extracts from Exhibit Deposition Exhibit No. 115

Bell Telephone Securities, May 1, 1926

This strength and the conservative financial structure of the System are reflected in the charts on this page. These show that on December 31, 1925, surplus and reserves of the Bell System were equal to nearly 37% of total capital obligations, and that the mortgage debt of the System on the same date was less than 18% and funded debt less than 32% of net assets.

* * * The American Telephone and Telegraph Company's capital stock on December 31, 1925, amounted to over $921,000,000, outstanding in the hands of the public. In addition, about $195,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $1,116,000,000 in Bell System stock oustanding in the hands of the public besides installments paid on new stock. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to over $890,000,000 consisting of $387,000,000 American Telephone and Telegraph Company obligations and $503,000,000 of Associated Company bonds and notes.

A study of the tables will also make clear the major movements in the Company's financing operations during recent years. Since 1921, there has been an increase in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to nearly 71% at the end of 1925.

[fol. 3814] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 116

Bell Telephone Securities, May 21, 1925

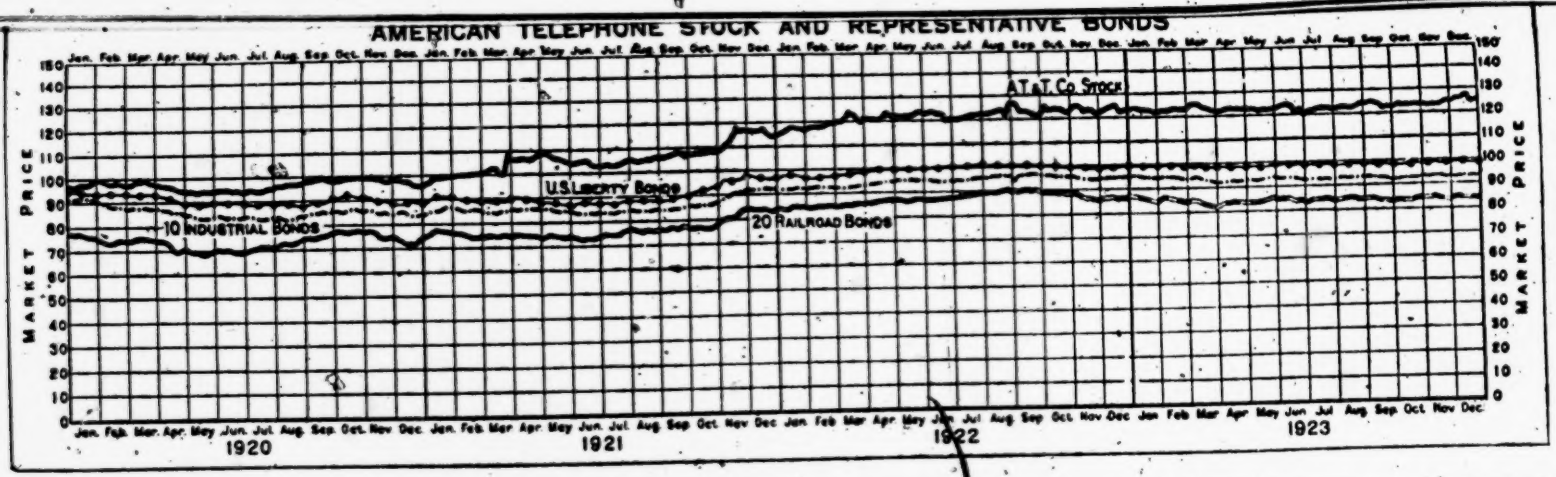
The American Telephone and Telegraph Company's capital stock on December 31, 1924, amounted to over $888,000,000, outstanding in the hands of the public. In addition, about $176,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $1,064,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $753,000,000, consisting of $272,000,000 American Telephone and Telegraph Company obligations and $481,000,000 of Associated Company bonds and notes.

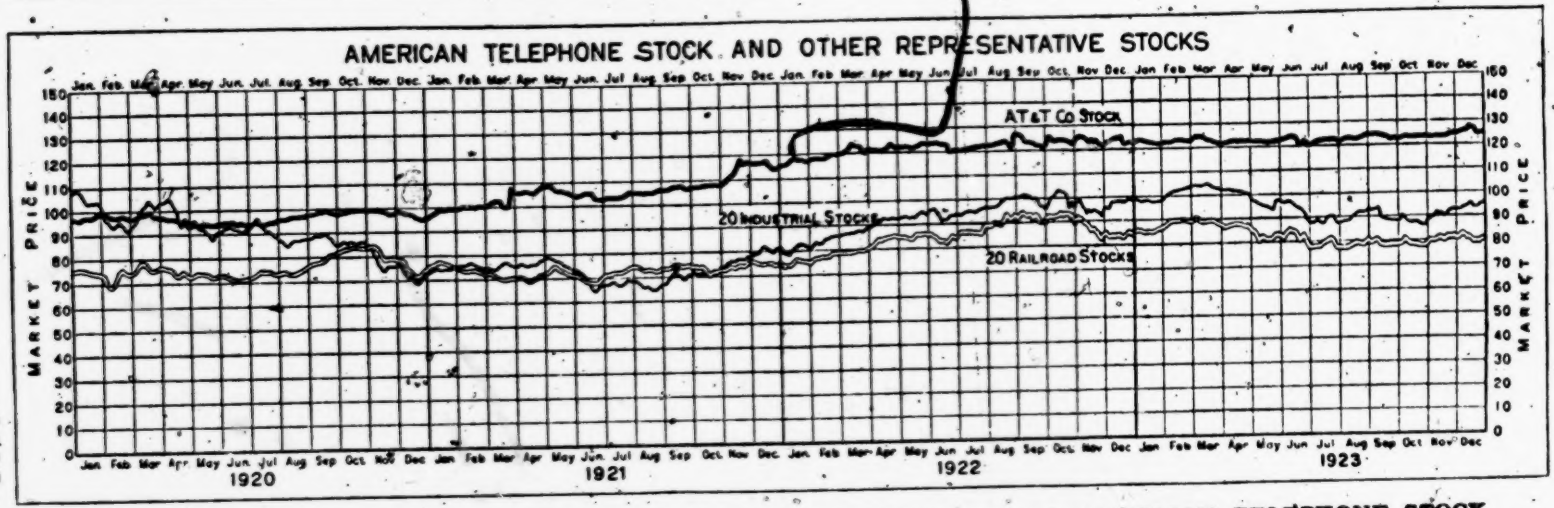
* * * * * * *

A study of the tables will also make clear the major movements in the Company's financing operations since 1914. Since 1921, there has been an increase in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 77% at the end of 1924. Even after the issue of $125,000,000 Debenture 5's in January, 1925, the ratio was nearly 70%.

Permanent financing is undertaken by the individual Associated Companies only when conditions are favorable and, in the meantime, the necessary funds for extensions and improvements are furnished to them by the American Company. Net advances to Associated Companies are, therefore, an important item in the parent company's assets. They are naturally subject to considerable fluctuation from year to year.

(Here follows side folio 3815)





STRENGTH AND STEADINESS OF MARKET PRICE HAVE CHARACTERIZED AMERICAN TELEPHONE STOCK

[fol. 3816] EXTRACTS FROM EXHIBIT, DEPOSITION EXHIBIT No. 117

Bell Telephone Securities, May 1, 1924

* * * The American Telephone and Telegraph Company's capital stock on December 31, 1923, amounted to over $735,000,000, outstanding in the hands of the public. In addition, about $138,000,000 in stock of other Bell companies was held by the public on that date, making a total of $873,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $753,000,000, consisting of $310,000,000 American Telephone and Telegraph Company obligations and $443,000,000 of Associated Company bonds and notes.

A study of the tables will also make clear the major movements in the Company's financing operations since 1914. During 1922, there was a marked change in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 75% at the end of 1922. At the close of 1922, the ratio was still above 70%, despite the issue of $100,000,000 Debenture 5½s.

[fol. 3817] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 118

Bell Telephone Securities, May 1, 1923

The American Telephone and Telegraph Company has kept and is keeping at the forefront in the development of radio telephony and by its own inventions and by the acquisition of licenses and patents it has a clear field in the application of radio to the telephone service of the Bell System. However, there are definite physical limitations to the use of radio and the hope cannot be extended that it will be substantially helpful to intercommunication by telephone between the many millions of its subscribers. But it may be expected that for certain services where wires cannot be provided, such as communication with ships at sea,

radio may be successfully employed and thereby broaden the scope of the service of the Bell System.

How the System is Financed

The American Telephone and Telegraph Company has made available the greater part of the capital which has been used to buy materials and pay for labor to build the properties of the Bell System.

The American Company, therefore, while operating the long distance lines throughout the country and performing various important services for the twenty-five Associated Companies, is also the principal financing agency of the Bell System, investing the proceeds arising from the sale of its own securities in the stocks, bonds, and notes of these operating companies. The American Telephone and Telegraph Company at present owns, directly or indirectly, about 90 per cent. of the voting stock of Associated Companies.

[fol. 3818] In order to raise necessary capital the American Company has issued its own bonds, stocks and notes, which have been bought by the investing public. Some of the Associated Companies have also made public sales of their stocks, bonds and notes, in addition to those which are owned by the American Company. Bell System securities now in the hands of the public are, therefore, American Telephone and Telegraph Company Capital Stock, Bonds and Notes, and the Bonds and Notes and some Stock of certain Associated Companies.

* * * * * * *

Taking into account these capital stock premiums, the surplus earnings and other company funds invested in the business, and the accumulated surpluses of the associated and controlled Companies, it is now conservatively estimated that the equity represented by the stock of the American Company equals approximately $190 per share.

* * * * * * *

The American Telephone and Telegraph Company's capital stock on December 31, 1922, amounted to nearly $700,000,000, outstanding in the hands of the public. In addition, about $122,000,000 in stock of other Bell System Companies was held by the public on that date, making a total of $822,000,000 in Bell System stock outstanding in

the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to about $646,000,000, consisting of $227,000,000 American Telephone and Telegraph Company obligations and $419,000,-
[fol. 3819] 000 of Associated Company bonds and notes.

The matter of inventories, such as supplies, tools and so forth, is not a comparatively large item in the balance sheets of the System. Nor does this item represent inventories in the ordinary commercial sense. The supplies are not carried for sale, nor are they transferred to other businesses, but, on the contrary, they are rapidly used in current operations or incorporated into plant.

It may be noted that net working assets of the Bell System, determined according to the usual procedure of corporate analysis, show a considerable fluctuation from year to year. This fluctation is due merely to the fact that the advance financing necessary to cover new construction has been accomplished earlier in the year on some occasions and later in the year on others, with a consequent variation in the cash reserves on hand.

To cover actual operations, Bell Telephone Companies require comparatively little net working capital. Heavy liquid assets such as are considered advantageous for ordinary commercial undertakings have no place in the telephone business.

This condition is due to the fundamental difference which exists between the telephone industry and ordinary commercial undertakings. The Bell System is engaged in furnishing telephone service. It has no manufactured product to sell and no items of merchandise to dispose of, whereas a manufacturing or trading concern ordinarily requires a heavy investment in raw materials, semi-finished and finished parts, and completed units, all of which call for a considerable volume of working capital.

[fol. 3820] Another aspect of the situation is that the telephone industry is stablized to a high degree and is not subject to the severe ups and downs of speculative business. The steadiness in the growth of each class of telephone revenues is evident in the table on page 18.

A study of the tables will also make clear the major movements in the Company's financing operations. The year 1909, for instance, was notable for the fact that within a period of ten months convertible bonds of the Company amounting to $101,000,000 were exchanged for its common stock at the rate of $133.73 per share. During 1922, there was a marked change in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 75% at the end of 1922.

[fol. 3821] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 119

Bell Telephone Securities, May 1, 1922

American Telephone and Telegraph Company Capital Stock

American Telephone stock, practically speaking, is the stock of the telephone industry of the nation. It is all of one class. The par value of each share is $100.

The total par value of American Telephone Stock outstanding on March 31, 1922, was approximately	$562,000,000
For this stock the company has received over	601,000,000
Thus the excess received over par value, known as capital stock premiums, is about	$39,000,000

Taking into account these capital stock premiums and the accumulated surpluses of its Associated Companies, it is now conservatively estimated that the equity represented by the stock of the American Company equals approximately $200 per share in actual money invested, without making any allowance for possible revaluations of physical plant on the basis of present price levels.

* * * * * * *

The American Telephone and Telegraph Company is the parent company and, as has been pointed out, supplies much of the capital for the development of the Associated

Companies, thereby becoming a large holder of their stocks and other securities. This is reflected in the capital liability items of the two balance sheets. The American Telephone and Telegraph Company's capital stock on December 31, 1921, amounted to about $548,000,000, outstanding in the hands of the public. In addition, about $84,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $632,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, [fol. 3822] however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $667,000,000 consisting of $301,000,000 American Telephone and Telegraph Company obligations and $366,000,000 of Associated Company bonds and notes.

* * * * * * *

American Telephone and Telegraph Company

Statement of Net Earnings

Years Ending December 31st

Years	Balance	Appropriated for Contingencies	Balance Added to Surplus
1900	$1,407,457	$937,258	$470,199
1901	2,348,262	1,377,651	970,611
1902	1,250,868	522,247	728,621
1903	1,945,514	728,140	1,217,374
1904	1,476,584	586,149	890,435
1905	3,167,683	1,743,295	1,424,388
1906	2,775,704	1,773,737	1,001,967
1907	5,325,744	3,500,000	1,825,744
1908	5,662,551	3,000,000	2,662,551
1909	6,059,113	3,000,000	3,059,113
1910	6,079,071	3,000,000	3,079,071
1911	5,563,815	2,800,000	2,763,815
1912	6,047,357	2,800,000	3,247,357
1913	5,466,053	2,500,000	2,966,053
1914	4,762,139	2,500,000	2,262,139
1915	5,518,047	2,500,000	3,018,047
1916	6,891,090	2,500,000	4,391,090
1917	5,989,492	2,500,000	3,489,492
1918	8,671,623	5,000,000	3,671,623
1919	9,039,457	5,000,000	4,039,457

(Here follow side folios 3823-3835)

Def 4132
P. 1

DEFENDANT'S EXHIBIT 132

PROVISIONAL ESTIMATE

FOR THE YEAR 1929

WITH

FORECAST FOR 1930-1933

BY THE

.....

(COMPANY)

DATE ISSUED ..... 192....

Dft 4132
Jan 1930

Hf 4132

p. 2

GENERAL NOTES

The Provisional Estimate and Four-Year Forecast should present the company's best estimates of expected growth and results of operation. It consists of estimates of expected station and plant growth, earnings and expenses, which are necessary to formulate specific construction and operating programs for the ensuing year, and to permit detailed analyses and coordination of proposed activities and expected results. It furnishes a basis for determining the financial and material requirements for the year covered by the Provisional Estimate, and for the general approximation of such requirements for the succeeding four years. Prepared annually, it aids in developing a somewhat comprehensive continuous program in respect of revenues, expenditures and property growth, including a program for rate changes when necessary.

The following matters should be given consideration in connection with the preparation of the 1929 Provisional Estimate and Four-Year Forecast:

1. The 1929-1933 Provisional Estimate and Forecast should be prepared on the basis of rates which are in effect at the time the Estimate is submitted, taking into consideration, however, rates which have already been approved to become effective at a definite future date. The estimates should not include the probable effect of expected rate changes and no provision has been made on the Provisional Estimate forms for indicating any such changes.

2. All important contemplated purchases and sales of plant included in the Estimate should be described in the letter of transmittal, which should state the assumptions made as to the date effective, number of stations, purchase or sale price and amounts of revenues and expenses involved. In this connection transactions between Associated Companies or between Associated Companies and Long Lines Department should be included only when agreed upon by both Companies involved so that the effect of a given transaction will be reflected correspondingly in the Estimates of both companies. The letter of transmittal should also state the pertinent facts as to other important contemplated purchases and sales of plant not included in the Provisional Estimate.

3. The letter transmitting the Provisional Estimate should contain a somewhat detailed discussion of the consideration given and assumptions made in respect of the several factors listed below in the preparation of the various statements:

   a) General Business Conditions.

   b) Estimated Line and Station Growth. Include statement covering general character of proposed sales activities, (exclusive of sales effort in connection with offered business) and indicate the net amount by which net line and station gain are expected to be increased by such activities over and above the amounts which might be expected without such activities; also indicate the corresponding effect of sales activities during 1928.

   c) Changes in Wage Rates and Material Costs.

   d) Plant Additions, Betterments and Improvements, including lists of major projects in the five-year period involving land, buildings and central office equipment (with cutover dates and number of lines) and major toll projects. For each project listed, show the gross construction in total for the five-year period and the amount of such construction for 1929. Also list by major projects (with brief description of each project) the amounts included in or excluded from the gross construction to cover payments to or reimbursements from other Associated Companies or Long Lines Department in connection with the construction of facilities to be jointly owned, such for example, as joint cable projects, etc. An analysis of the cable program is called for on the reverse of Statement G, Sheet 1.

   e) Proposed Financing for year 1929.

   f) Revenues and Expenses:

      1. Rate and Revenue Program.
      2. Estimated calling rate.
      3. Estimated toll usage.
      4. Directory and other miscellaneous revenues.
      5. Traffic expenses.
      6. Commercial expenses.
      7. Current maintenance expenses.
      8. General, miscellaneous and other expenses. (Includes provision for service pension accruals).
      9. Depreciation.
      10. Taxes. State amount of Federal Income Tax included in each of years 1928-1933.

4. The Provisional Estimate should reach New York not later than November 15th. The compilation of complete figures for the year 1928 will necessitate the use of estimates for the latter months of the year. These estimates should be made at the latest practicable date in order that the totals for the year may be as nearly accurate as possible.

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Ref 24,132
1.3

INDEX

Summary of Provisional Estimate and Forecast, Compared with Results of 1924-1928	Statement A
Supplemental Station and Plant Data	Statement B
Estimated Plant and General Equipment Expenditures, 1929	Statement C-1
Estimated Plant and General Equipment Expenditures, 1930-1933	Statement C-2
Estimated Earnings and Expenses for 1929-1933 on Annual Basis, Sheet 1	Statement E
Estimated Earnings and Expenses for 1929—By Months, Sheet 2	Statement E
Estimate of Cash Requirements—Year 1929	Statement F
Estimated Quantities of New Material to be Delivered, 1929-1933, Sheets 1 and 2	Statement G
Explanation of Statements	Pages 1 to 10

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SUMMARY OF PROVISIONAL ESTIMATE AND FORECAST

(COMPARED WITH RESULTS OF 1924-1928, INCL.)

Name of Company .....

FORM S. H. 311-P
PROVISIONAL ESTIMATE 1929
STATEMENT A

		Actual Results					PROV. EST.	Forecast			
	COMPANY STATIONS	1924	1925	1926	1927	1928†	1929	1930	1931	1932	1933
1	Total Inward Station Movement*										
2	Total Outward Station Movement*										
3	Net Station Gain*										
4	% Gain to Total Stations Jan. 1st										
5	% Outward Sta. Movement to Total Stas. Jan. 1st										
6	Net Sta. Gain by Purchases, Sales and Transfers							XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
7	Total Stations at End of Year										
8	Average Number of Stations										
9	% Increase over Previous Year										
10	% Operated from Dial System C. O.										
	PLANT										
11	Gross Construction (Incl. C. W. in P.)*										
12	Net Additions (Incl. C. W. in P.)*										
13	Per Station Gained (Incl. C. W. in P.)*										
14	Net Add. to Plant by Purchases, Sales and Trans.							XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
15	Total Plant at End of Year (Incl. C. W. in P.)										
16	% Increase Over End of Previous Year										
17	Total Plant at End of Year Per Station										
18	Average Plant in Service (Excludes Gen'l Equip.)										
19	Average Plant in Service Per Average Station										
	REV. AND EXP. (Under Existing Rates for 1929-1933)‡										
20	Exchange Revenues										
21	Toll Revenues										
22	Miscellaneous Operating Revenues										
23	**Total Telephone Revenues**										
24	Traffic Expenses										
25	Commercial Expenses										
26	Gen. and Misc. Expenses										
27	Other Oper. Expenses										
28	Current Maintenance										
29	Depreciation										
30	Taxes										
31	**Total Telephone Expenses**										
32	**Net Telephone Earnings**										
33	Depreciation ($\frac{340, 608}{609}$) % to Av. Plant in Serv. ($\frac{incl.}{261}$)††										
34	Reserve for Depreciation ($\frac{102}{103}$)—End of Year										
35	% to Total Plant in Service and Gen'l Equip. ($\frac{excl.}{211}$)										

* Excluding Purchases, Sales and Transfers.
‡ Average per Station—Annual Basis.
†† Depreciation % on line 33 corresponds with that shown on Mo. Report No. 1.

† Last ..... Months Estimated.
Show money value and number of stations to nearest thousand, omitting last three digits.
Per station figures should be given in dollars and cents.
Show percentages two figures to right of decimal.

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Ref 8,132 p. 4

A

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FORM S. H. 312-P
DIVISIONAL ESTIMATE 1929

SUPPLEMENTAL STATION AND PLANT DATA

Name of Company .....

STATEMENT B

		Actual Results					PROV. EST.	Forecast				
		1924	1925	1926	1927	1928†	1929	1930	1931	1932	1933	
1	Total Changes of Address[1]											1
2	Net Residence Station Gain*[1]											2
3	Net Business Station Gain*[1]											3
4	Net Gain in Exchange Circuits to Co. Stations*[1]											4
5	No. of Exch. Circuits to Co. & Serv. Stations, Dec. 31[1]											5
6	Total Panel Lines in Service, Dec. 31[1]											6
7	Total Step-by-Step Lines in Service, Dec. 31[1]											7
8	No. Stations Operated from Panel C. O., Dec. 31[1]											8
9	No. Stations Operated from S. by S. C. O., Dec. 31[1]											9
10	Av. Stations Operated from Dial System C. O.[1]											10
11	Average Daily Calling Rate per Station—Local											11
12	Toll Usage { Total messages A-B[1]											12
13	Toll Usage { Total messages—Toll Board[1]											13
14	Original Cost of Plant Removed or Abandoned[1]											14
15	Cost of Removal[1]											15
16	Salvage[1]											16
17	Net Extraordinary Repairs[1]											17
18	Total (14 + 15 + 17 − 16)[1]											18
19	Total Net Charges to Reserves (102,103)[1]							xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	19
20	Deprc'n (**) % to Av. Plant in Serv. & Gen'l Equip. (Except Land)											20
21	Total Plant in Serv. & Gen'l Equip. (Except Land), Dec. 31[1]											21

1929 MAJOR ITEMS BY MONTHS

		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
22	Total Inward Station Movement*														22
23	Total Outward Station Movement*														23
24	Net Station Gain*														24
25	Net Station Gain by Purchases, Sales & Trans.														25
26	Average No. of Stations[1]													xxx xxx	26
27	Toll Usage (Total Messages Incl. A-B)[1]														27
28	Gross Construction‡[1]*														28
29	Net Additions‡[1]*														29
30	Average Plant in Service (Excludes Gen'l Equip.)[1]													xxx xxx	30

* Excluding Purchases, Sales and Transfers.
** Accounts 340, 608, 609 and Dep'n charged to Accounts 701 to 704
‡ Includes Construction Work in Progress.

† Last ..... Months Estimated.
1 "000" omitted.
Show percentages two figures to right of decimal—Annual basis.

Date Issued .....

3827

Ref 4132
p. 5

B

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ESTIMATED PLANT & GEN'L EQUIP. EXPENDITURES, 1929
(Including Construction Work in Progress)

Name of Company .....

FORM S. R. 313-P
PROVISIONAL ESTIMATE 1929

STATEMENT C-1

	"000" Omitted	GROSS CONSTRUCTION: Under Specific Estimates (a)		Under Routine Estimates (including gross wiring gain) (b)		Total (c)		Original Cost of Plant Removed or Abandoned (including gross wiring loss) (d)		Net Additions (e)		
1	**Total Right of Way (207)**											1
2	Land (211)											2
3	Buildings (212)											3
4	**Total Land and Buildings (210)**											4
5	Manual Offices (221-01)											5
6	Panel Offices (221-02)											6
7	Step-by-Step Offices (221-03)											7
8	Other Equipment (222)											8
9	**Total Central Office Equipment (220)**											9
10	**Total Station Equipment (230)**											10
11	Pole Lines (241)											11
12	Aerial Cable (242)											12
13	Aerial Wire (243)											13
14	Underground Conduit (244)											14
15	Underground and Submarine Cable (245-6)											15
16	**Total Exchange Lines**											16
17	Pole Lines (251)											17
18	Aerial Cable (252)											18
19	Aerial Wire (253)											19
20	Underground Conduit (254)											20
21	Underground and Submarine Cable (255-6)											21
22	**Total Toll Lines**											22
23	Interest During Construction (268)			XXXXXX	XXX							23
24	Undistributed Construction Expenditures (270)											24
25	**Total Plant**											25
26	General Equipment (260)	XXXXXX	XXX	XXXXXX	XXX							26

	"000" Omitted	Station Equipment (f)		Exchange Aerial Wire (g)		
27	Gross Wiring Gain in Column (b)					27
28	Gross Wiring Loss in Column (d)					28
29	Net Wiring Loss in Column (e)					29

3828

Date Issued .....

C-1

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ESTIMATED PLANT &
GEN'L EQUIP. EXPENDITURES, 1930 to 1933
(Including Construction Work in Progress)

Name of Company _____

FORM S. M. 313-P
PROVISIONAL ESTIMATE 1925

STATEMENT C-2

"000" Omitted	1930 Gross Construction (a)	1930 Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	1930 Net Additions (c)	1931 Gross Construction (a)	1931 Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	1931 Net Additions (c)	1932 Gross Construction (a)	1932 Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	1932 Net Additions (c)	1933 Gross Construction (a)	1933 Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	1933 Net Additions (c)	
Total Right of Way (207)													1
Land (211)													2
Buildings (212)													3
Total Land and Buildings (210)													4
Manual Offices (221-01)													5
Panel Offices (221-02)													6
Step-by-Step Offices (221-03)													7
Other Equipment (222)													8
Total C. O. Equipment (220)													9
Total Station Equipment (230)													10
Total Exchange Lines (241-6)													11
Pole Lines (251)													12
Aerial Cable (252)													13
Aerial Wire (253)													14
Underground Conduit (254)													15
U.G. & Submarine Cable (255-6)													16
Total Toll Lines													17
Interest During Construction (268)													18
Undistr. Constr. Expenditures (270)													19
Total Plant													20
General Equipment (260)													21

"000" Omitted	1930 Station Equipment (d)	1930 Exchange Aerial Wire (e)	1931 Station Equipment (d)	1931 Exchange Aerial Wire (e)	1932 Station Equipment (d)	1932 Exchange Aerial Wire (e)	1933 Station Equipment (d)	1933 Exchange Aerial Wire (e)	
Gross Wiring Gain in Column (a)									22
Gross Wiring Loss in Column (b)									23
Net Wiring Loss in Column (c)									24

Date Issued _____

3829

C-2

For P. 8 of Deposition Exhibit 132, Statement E
Sheet 1 of Provisional Estimate for year 1929,
See Form of Defendant's Exhibit X-354, P. 45.

34461

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ESTIMATED EARNINGS AND EXPENSES
UNDER EXISTING RATES
1929—BY MONTHS

FORM S. N. 315-P
PROVISIONAL ESTIMATE 1929

STATEMENT E
SHEET 2

(Name of Company)

	EARNINGS & EXPENSES (Under Existing Rates)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
1	Exchange Revenues...														1
2	Toll Revenues.....														2
3	Misc. Oper'g Rev.....														3
4	**Total Tel. Revenues....**														4
5	Traffic Expenses.....														5
6	Commercial Expenses..														6
7	Gen'l & Misc. Exp....														7
8	Other Oper. Expenses..														8
9	**Total Operation Exp....**														9
10	Superv. of Maint'ce...														10
11	Ordinary Repairs.....														11
12	Rearr. and Changes...														12
13	Sta. Removals & Chgs.														13
14	**Total Current Maint'ce.**														14
15	Depreciation.....														15
16	Taxes.....														16
17	**Total Tel. Expenses....**														17
18	**Net Telephone Earnings**														18
19	Sundry Net Earnings.														19
20	**Total Net Earnings....**														20
21	Deduct Interest.....														21
22	**Balance Net Profits....**														22
23	Deduct Div. (Preferred)														23
24	(Common)														24
25	**Total Dividends.....**														25
26	**Undivided Profits.....**														26
27	Lic. Rev. Dr. (included in Line 8)														27
28	*Net Tel. Earn. to Aver. Plt. in Serv.	%	%	%	%	%	%	%	%	%	%	%	%	%	28
29	Int. pd. A.T.&T.Co. (included in Line 21)														29

Show money value to nearest thousand dollars, omitting last three digits.
* Show percentages two figures to right of decimals—Annual Basis.

3831

Date Issued.....

E-2

For P. 10 of Deposition Exhibit 132, Statement F,
of Provisional Estimate for year 1929, -
See form of Defendant's Exhibit X-354, p. 48.

FORM [illegible] 317-P
PROVISIONAL ESTIMATE 1929
STATEMENT G
SHEET 1

Ref 4.132 p. 11

(Name of Company)

ESTIMATED QUANTITIES OF NEW MATERIAL REQUIRED TO BE DELIVERED IN 1929-1933 FOR CONSTRUCTION AND MAINTENANCE

	SWITCHBOARDS	1929	1930	1931	1932	1933	
1	Manual, Large Mult. Sections (excludes D. S. "A.")						1
2	Manual, Small Mult. C. O. Sections (excludes D. S. "A.").						2
3	Manual, Small Mult. P. B. X. Sections (excluding No. 700)						3
4	Manual, Non-Mult. Sections, No. 505 Type						4
5	Manual, Non-Mult. Sections, No. 551 Type						5
6	Manual, Non-Mult. Sections, Total other types (excluding No. 700)						6
7	Panel—No. of Lines, Total						7
8	Panel—No. of Frames, Total						8
9	Step-by-Step—No. of Lines, Total						9
10	No. 700—P. B. X.—No. of New Exchanges			XXXX XXX	XXXX XXX	XXXX XXX	10
11	No. 700—P. B. X.—No. of Sections						11
12	No. 700—P. B. X.—No. of Lines Equipped—Total						12
13	No. 740—P. B. X.—No. of New Exchanges						13
	REPEATERS AND CARRIER CURRENT EQUIPMENT						
14	Telephone Repeaters No. 21, 22 and 44 Types						14
15	Telegraph Repeaters, Metallic						15
16	Telegraph Repeaters, Differential Duplex						16
17	Telegraph Repeaters, Single Line			XXXX XXX	XXXX XXX	XXXX XXX	17
18	Telegraph Repeaters, One Way Polar			XXXX XXX	XXXX XXX	XXXX XXX	18
19	Carrier Telephone Systems, Type "C"						19
20	Carrier Telephone Systems, Type "D"						20
21	Carrier Telegraph Systems, Type "B"						21
22	Carrier Telegraph Systems, "Voice Frequency"						22
	LOADING COILS						
23	Side and Phantom Loading Coils						23
24	Non-phantom Loading Coils						24
25	Carrier Loading Coils						25
26	Loading Coil Cases						26
	CABLE TERMINALS						
27	"C" Type						27
28	No. 14 Type						28

LEAD COVERED CABLE EXPRESSED IN MILLIONS OF CONDUCTOR FEET

	PAIRED CONDUCTORS (Non-Quadded)	1929 In Quadded Cable	1929 Total	1930 In Quadded Cable	1930 Total	1931 Total	1932 Total	1933 Total	
29	No. 16 and larger								29
30	No. 19								30
31	No. 22								31
32	No. 24								32
	QUADDED CONDUCTORS								
33	No. 16 and larger								33
34	No. 19 and smaller								34
35	Total (Lines 29 to 34)*								35
36	Toll Aer. Cable Linear Ft. (Include Cond. Ft. in Lines 29 to 35)	XXXX XXX		XXXX XXX					36

* Give Analysis on Reverse.

Date Issued .....

3833

Printed in U. S. A.

CABLE PROGRAM

In order to indicate the general nature of the cable program for 1929, show an approximate subdivision of the total conductor feet of cable to be delivered in 1929, as given on Statement G, under the following general classifications:

Class	*No. of Conductor Feet*
1. Toll Cable* (Total of Lines 29, 33 & 34)	
2. Interoffice Trunk Cable	
3. Cutover Cable, i. e., subscribers' cable primarily intended for cutting areas from one central office to another or required in connection with cutting new central offices into service	
4. Cable required for extending, relieving and replacing the underground and aerial feeder and distributing cable system not included in Item No. 3	
5. Cable required for rehabilitation of purchased plant	
Total (Should agree with Statement G, Sheet 1, line 35, 1929)	

* List below, each major toll project, giving approximate mileage of cable sheath and conductor feet subdivided by gauges.

FORM S.H. 317-P
PROVISIONAL ESTIMATE 1929

STATEMENT G
SHEET 2

(Name of Company)

ESTIMATED QUANTITIES OF NEW MATERIAL REQUIRED TO BE DELIVERED IN 1929-33 FOR CONSTRUCTION AND MAINTENANCE

SYATION APPARATUS

		1929		1930		1931		1932		1933		
1	Subscriber Sets, Bell Boxes											1
2	Subscriber Sets, Wall Type											2
3	Desk Stands											3
4	Hand Telephone Sets											4
5	Coin Collectors No. 50 Type											5
6	Coin Collectors No. 7 Type											6

ESTIMATE OF POLE REQUIREMENTS

		1929			1930			1931		1932		1933		
		Treated		Non-treated		Total	Treated		Non-treated		Total			
7	Western Cedar													7
8	Eastern Cedar													8
9	Chestnut													9
10	Creosoted Pine			xx	xxx			xx	xxx					10
11														11
12														12
13														13
14														14
15														15
16														16
17	To be purchased locally (incl. above)	xxx	xxx	xx	xxx		xxx	xxx	xx	xxx				17

LINE MATERIAL

		1929			1930			
18	Bare Copper Wire (lbs.)							18
19	Galvanized Iron Wire (lbs.)							19
20	Strand (Thousands of feet)							20
21	Insulated Wire (Drop, Bridle and Inside) (Thousands of conductor feet)							21
22	Conduit, Clay (duct ft.)							22
23	Conduit, Wood (duct ft.)							23
24	Crossarms, Fir							24
25	Crossarms, Pine							25

Printed in U. S. A.

[fol. 3836] DEPOSITION EXHIBIT #134

Extimated Benefits to the American Telephone and Telegraph Company from Consolidated Income Tax Returns During the Years 1918 to 1930, Inclusive (Based on Final Settlement Data for Years 1918 to 1923 and on Returns as Filed for Other Years)

Year	Amount
1918	$196,286.17
1919	343,926.87
1920	346,827.89
1921	617,982.52*
1922	50,984.97
1923	14,673.11
1924	58,445.02*
1925	19,330.92*
1926	
1927	319.78
1928	76.49*
1929	
1930	
Total	$257,183.84

Notes

(1) Companies having "deficits" failed to pay dividends to American Company.

(2) No consideration given in above figures to cost to American Company of preparing Consolidated Return and handling settlement matters with Bureau.

* Red figures.

[fol. 3837] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 139

American Telephone and Telegraph Company

Published Market Prices of Principal Bell System Securities

(From this exhibit there has been taken in this extract information concerning Preferred stocks only)

Stocks	Range for 1921 Week Ending Dec. 31, 1921 — High	Low	Yield
Michigan State Telephone Company Pref. (6% Cum.)			
Pacific Tel. & Tel. Co. Preferred 6%	87-½	80	6.70
Southwestern Bell Tel. Co. Preferred 7%	100	100	7.00
Radio Corporation of America Preferred (7%)	2-7/8	1-5/8	....

[fol. 3836] DEPOSITION EXHIBIT #134

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Pacific Tel. & Tel. Co. Preferred 6%	87-½	80.	6.70
Southwestern Bell Tel. Co. Preferred 7%	100	100	7.00
Radio Corporation of America Preferred (7%)	2-7/8	1-5/8	....

	Range for 1922		Week Ending Dec. 31, 1922
Chesapeake and Potomac Tel. Co. Preferred 7%	110-½	105	6.36
Michigan State Telephone Company Pref. (6% Cum.)	*	*	....
New York Telephone Company Preferred 6½%	112-¾	106	5.87
Ohio Bell Telephone Company Preferred 7%	105-½	96-¼	....
Pacific Tel. and Tel. Co. Preferred 6%	92 ½	86-5/8	....
Southwestern Bell Tel. Co. Preferred 7%	100	100	....
Western Electric Company, Inc. Preferred 7%	113-¾	107	6.19
Wisconsin Telephone Company Preferred 7%	*	*	....
Radio Corporation of America Preferred (7%)	3-¾	2-7/8	....

[fol. 3838]

Stocks	Range for 1923 High	Low	Week Ending Dec. 31, 1923 Yield
Chesapeake and Potomac Tel. Co. Preferred 7%	110-¾	108-¾	6.33
New York Telephone Company Preferred 6-½%	112	107-½	5.90
Pacific Tel. and Tel. Co. Preferred 6%	95	91-½	6.42
Southwestern Bell Tel. Co. Preferred 7%	106-½	101	6.76
Western Electric Company, Inc. Preferred 7%	117	111-1/8	....
Wisconsin Telephone Company Preferred 7%	*	*	....

	Range for 1924		Week Ending Dec. 31, 1924
Bell Tel. Co. of Pennsylvania Preferred 6-½%	109-½	104	6.05
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	112	109-1/8	6.30
New York Telephone Company Preferred 6-½%	112-¾	109	5.88
Ohio Bell Telephone Company Preferred 7%	108-½	102	6.51
Pacific Tel. and Tel. Co. Preferred 6%	95	88-½	6.42
Southwestern Bell Tel. Co. Preferred 7%	108-¾	103	6.56
Western Electric Company, Inc. Preferred 7%	117	111-5/8	6.06
Wisconsin Telephone Company Preferred 7%	*	*	....

[fol. 3839]

Stocks	Range for 1925 High	Low	Week Ending Dec. 31, 1925 Yield
Bell Tel. Co. of Pennsylvania Preferred 6-½%	112	107-¾	....
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	114-¼	110-1/8	6.25
New York Telephone Company Preferred 6-½%	114	110-½	5.88
Ohio Bell Telephone Company Preferred 7%	110	106-¼	6.36
Pacific Tel. and Tel. Co. Preferred 6%	104	92-5/8	5.77
Southwestern Bell Tel. Co. Preferred 7%	115-½	107-½	....
Wisconsin Telephone Company Preferred 7%	*	*	....

	Range for 1926		Week Ending Dec. 31, 1926
New York Telephone Company Preferred 6-½%	116-½	110-½	5.68
Bell Tel. Co. of Pennsylvania Preferred 6-½%	113-3/8	109-½	....
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	116	110-½	6.06
Ohio Bell Telephone Company Preferred 7%	115	109	6.35
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co., Preferred 6-½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	116-½	112-½	....
Pacific Tel. and Tel. Co. Preferred 6%	107-1/8	99-7/8	....

fol. 3840]

Stocks	Range for 1927 High	Low	Week Ending Dec. 31, 1927 Yield
New York Telephone Company Preferred 6-½%	115-5/8	112-¾	5.73
Bell Tel. Co. of Pennsylvania Preferred 6-½%	117-½	112-½	5.62
Chesapeake & Potomac Tel. Co. of Baltimore City Preferred 7%	118-¼	115	5.91
Ohio Bell Telephone Company Preferred 7%	114	106-½	6.31
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6-½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	120	114-½	5.94
Pacific Tel. and Tel. Co. Preferred 6%	116	102	5.29

Stocks	Range for 1928 High	Low	Week Ending Dec. 31, 1928 Yield
New York Telephone Company Preferred 6½%	115-¾	111-¾	5.73
Bell Tel. Co. of Pennsylvania Preferred 6-½%	118-¼	114-¾	5.61
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	117-¾	113	6.13
Ohio Bell Telephone Company Preferred 7%	115	109-¼	6.22
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6-½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	121-½	117-1/8	5.91
Pacific Tel. and Tel. Co. Preferred 6%	125	113-½	....

[fol. 3841]

Stocks	Range for 1929 High	Low	Week Ending Dec. 31, 1929 Yield
New York Telephone Company Preferred 6-½%	114-7/8	111	5.68
Bell Tel. Co. of Pennsylvania Preferred 6-½%	118	110	5.68
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	117-½	112	6.09
Ohio Bell Telephone Company Preferred 7%	117	109-½	6.31
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6-½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	121-½	113	6.02
Pacific Tel. and Tel. Co. Preferred 6%	139-1/8	114-¾	....

Stocks	Range for 1930 High	Low	Week Ending Dec. 31, 1930 Yield
New York Telephone Company Preferred 6-½%	117-½	112	5.70
Bell Tel. Co. of Pennsylvania Preferred 6-½%	118	113-½	5.65
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	119-5/8	113-5/8	6.00
Ohio Bell Telephone Company Preferred 7%	115	105-¾	....
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6-½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	123	116-½	5.98
Pacific Tel. and Tel. Co. Preferred 6%	144	119	....

(Here follows Dep: Ex. 142, side folios 3842 and 3843)

[fol. 3842]

DEP. EX. 142

American Telephone and Telegraph Company

Long Lines Department

	1919 (Last 5 Mos.)	1920	1921	1922	1923	1924	1925
Message Toll Service:							
Gross Revenue	14,647,712.41	39,453,081.34	38,716,692.79	44,918,136.28	49,603,412.29	50,530,000.96	55,815,867.97
Long Lines Share	10,848,354.25	29,317,465.09	28,437,120.53	33,027,378.34	36,129,600.23	36,355,116.39	40,859,653.26
Special Contract Service Revenue:							
Telephone:							
Full Talking Service:							
Gross Revenue		1,109,723.09	1,062,963.42	1,201,807.33	1,368,801.49	1,575,651.09	1,925,826.89
Long Lines Share		890,091.84	918,552.04	1,025,814.91	1,155,752.37	1,306,868.55	1,626,670.13
Short Period Talking Service furnished Patrons other than the Press:							
Gross Revenue		208,298.43	297,980.03	312,040.25	308,257.27	259,707.36	263,921.14
Long Lines Share		168,224.44	230,169.40	242,706.07	237,640.52	198,882.33	209,647.91
Short Period Talking Service and Public News Telephone Service furnished to the Press:							
Gross Revenue		110,914.73	184,765.20	193,907.09	180,861.84	179,077.22	175,476.59
Long Lines Share		17,956.34	18,012.15	15,801.28	5,814.74	22,861.14	27,236.40
Program Transmission Service and Public Address System Use:							
Gross Revenue						210,219.72	286,774.91
Long Lines Share						205,318.60	248,164.93
Total Telephone Special Contract Service:							
Long Lines Share	454,260.12*	1,076,272.62	1,166,733.59	1,284,322.26	1,399,207.63	1,733,930.62	2,111,719.37
Telegraph:							
Telephone Typewriter Service furnished Patrons other than the Press:							
Gross Revenue		72,827.20	133,447.96	143,685.15	208,651.77	281,684.51	363,301.52
Long Lines Share		68,851.07	123,848.96	136,020.09	195,912.98	255,110.64	328,786.17
Telephone Typewriter Service furnished the Press:							
Gross Revenue		109,745.93	252,934.69	287,234.13	313,491.06	450,223.37	680,483.89
Long Lines Share		101,366.27	227,746.27	242,956.30	248,165.61	329,645.00	500,831.76
Morse Service furnished Patrons other than the Press:							
Gross Revenue		8,761,462.44	8,718,604.94	9,149,898.27	9,812,775.14	9,570,550.13	10,948,592.71
Long Lines Share		6,519,702.86	6,638,824.90	6,927,456.62	7,374,693.45	6,899,319.16	8,136,143.53
Morse Service furnished the Press:							
Gross Revenue		734,767.42	1,344,281.02	1,699,061.47	1,923,889.07	2,086,003.43	2,171,622.54
Long Lines Share		371,065.91	659,103.13	884,553.32	973,358.29	1,149,057.04	1,246,432.80
Telegrams handled for Associated Companies:							
Long Lines Share		4,474.15	6,727.26	5,642.06	8,354.34	9,302.40	11,051.41
Total Telegraph Special Contract Service:							
Long Lines Share	2,527,761.49**	7,065,460.29	7,656,250.52	8,196,628.39	8,800,484.67	8,642,434.24	10,223,245.67
Telephoto Service:							
Gross Revenue	591,812.78						16,637.90
Long Lines Share	3,427,891.61						12,039.54

* Gross
** Gross

[fol. 3843]

	1926	1927	1928	1929	1930
Message Toll Service:					
Gross Revenue	57,333,630.83	62,028,511.62	77,409,583.99	94,420,607.83	95,019,083.96
Long Lines Share	43,206,941.27	46,678,035.11	58,769,659.18	68,703,269.73	68,601,594.29
Special Contract Service Revenue:					
Telephone:					
Full Talking Service:					
Gross Revenue	2,229,087.45	2,515,822.47	2,979,645.07	3,754,518.82	4,075,165.07
Long Lines Share	2,051,626.34	2,300,950.67	2,653,653.84	3,448,515.74	3,617,633.46
Short Period Talking Service furnished Patrons other than the Press:					
Gross Revenue	267,249.06	303,827.66	313,867.03	362,382.57	377,483.12
Long Lines Share	214,096.12	235,329.47	235,719.29	275,058.92	268,852.19
Short Period Talking Service and Public News Telephone Service furnished to the Press:					
Gross Revenue	178,745.43	147,114.74	133,927.63	113,281.19	110,157.99
Long Lines Share	36,527.59	14,281.97	19,066.43	12,805.74	1,717.89
Program Transmission Service and Public Address System Use:					
Gross Revenue	463,158.80	1,462,819.88	2,498,210.40	3,509,414.88	4,410,904.73
Long Lines Share	443,425.41	1,269,711.72	2,032,126.75	2,837,973.12	3,442,701.97
Total Telephone Special Contract Service:					
Long Lines Share	2,745,675.46	3,760,273.83	4,940,566.31	6,574,353.52	7,330,905.51
Telegraph:					
Telephone Typewriter Service furnished Patrons other than the Press:					
Gross Revenue	560,761.57	719,141.06	1,448,514.05	3,640,274.58	5,547,193.01
Long Lines Share	511,642.12	647,918.35	1,321,202.45	3,179,909.79	4,679,075.69
Telephone Typewriter Service furnished the Press:					
Gross Revenue	1,082,216.24	1,717,829.92	3,016,553.92	3,630,044.99	4,213,855.27
Long Lines Share	840,796.08	1,326,899.73	2,196,512.26	2,540,241.72	2,895,994.32
Morse Service furnished Patrons other than the Press:					
Gross Revenue	11,605,236.77	11,925,231.88	13,105,796.29	13,953,746.11	12,396,020.85
Long Lines Share	9,626,037.25	10,164,045.16	11,122,899.07	11,620,823.17	10,226,336.19
Morse Service furnished the Press:					
Gross Revenue	2,042,505.60	1,776,107.83	1,331,076.44	1,015,580.27	778,781.75
Long Lines Share	1,253,477.92	1,121,494.91	887,958.40	662,396.54	510,548.35
Telegrams handled for Associated Companies:					
Long Lines Share	29,316.42	23,780.21	27,197.12	21,885.79	21,716.03
Total Telegraph Special Contract Service:					
Long Lines Share	12,261,269.79	13,284,138.36	15,555,769.30	18,025,257.01	18,333,670.58
Telephoto Service:					
Gross Revenue	47,605.40	121,648.20	130,092.39	134,855.79	89,197.29
Long Lines Share	15,815.92	83,740.96	77,081.01	59,533.32	35,452.37

[fol. 8344] DEFN. EX. 145

$50,000,000

Illinois Bell Telephone Company

First and Refunding Mortgage 5% Gold Bonds, Series A
Dated June 1, 1923. Due June 1, 1956

Interest payable June 1 and December 1 in Chicago or in New York City

Coupon Bonds in denominations of $1,000, $500 and $100, registerable as to principal. Registered Bonds in denominations of $1,000, $5,000 and $10,000. Coupon Bonds and registered Bonds, and the several denominations, interchangeable

Redeemable, at the option of the Company, in whole but not in part, upon 60 days' notice, on June 1, 1929, or on any interest date thereafter, at the following prices with accrued interest; if on or prior to December 1, 1952, at 105%, and if subsequent to December 1, 1952, at par

First Trust and Savings Bank, Chicago, Trustee

W. R. Abbott, Esq., President of Illinois Bell Telephone Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Illinois Bell Telephone Company does all of the telephone business in the City of Chicago and owns and operates a comprehensive system of exchanges and toll lines serving, with its connecting companies, practically the entire State of Illinois

These Bonds are to be secured by a first mortgage on all the real estate, buildings and telephone plant of the Company in the State of Illinois, with the exception of certain property recently acquired from the Southwestern Bell Telephone Company at a cost of approximately $843,000.

Upon the satisfaction forthwith of the existing bonded debt, including the $19,004,000 First Mortgage 5% Bonds due December 1, 1923 (issued under the name of Chicago Telephone Company), and the retirement of $15,530,179 three-year 5% unsecured notes of the Company, from the proceeds of these Bonds, the $50,000,000 Series A Bonds

will constitute the Company's sole funded debt. In comparison therewith, the book cost of the real estate, buildings and telephone plant of the Company was approximately $133,000,000 on March 31, 1923, and the total assets amounted to over $143,000,000, which figures will be substantially increased by the balance of the proceeds of this issue to be utilized for additions and betterments. The present value of the Company's property is greatly in excess of its book cost.

The situation with respect to the Company's franchises is generally satisfactory. A franchise for the City of Chicago was granted in 1889. In 1907, a new franchise was granted for a 22-year period, expiring in 1929, and there is no reason to believe that it will not be renewed on a satisfactory basis. The existing franchise contains a provision giving the City the right, at the expiration of this franchise, upon giving twelve months' previous notice, to purchase the property of the Company located within the City, paying therefor in cash the cost of duplication at that date less depreciation, but without allowance for earning power or franchise value. On March 31, 1923, the book cost of the physical property of the Company located within the City of Chicago was in excess of $92,000,000, which cost is much less than the present value of the property.

The income account of the Illinois Bell Telephone Company for the past ten years has been as follows, earnings prior to December 1, 1920 not including earnings from the properties then purchased from the Central Union Telephone Company:

Year Ended December 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges	Net Income
1913	$15,551,536	$3,605,968	$969,414	$2,636,554
1914	16,512,418	3,523,671	953,075	2,570,596
1915	17,711,855	4,122,569	959,521	3,163,048
1916	19,769,568	4,395,750	981,165	3,414,585
1917	21,651,494	3,541,569	1,093,571	2,447,998
1918	*	4,314,084	1,079,189	3,234,895
1919	*	4,031,842	998,663	3,033,179
1920	33,361,416	2,697,843	1,271,383	1,426,460
1921	44,748,392	7,668,279	2,042,327	5,625,952
1922	48,169,798	8,425,665	2,072,036	6,353,629

*Property under Federal control during portion of year.

During the past ten years the Company's net earnings available for interest have averaged over three times the interest charges and in one of these years they have been less than twice such interest charges. During each of the years 1921 and 1922, net earnings available for interest amounted to more than three times the annual interest requirements of $2,500,000 on these Bonds. Adequate charges have been made annually against earnings for depreciation and obsolescence.

The Company has outstanding $60,000,000 par value of capital stock (to be increased presently to $70,000,000), more than 98% of which is owned by the American Telephone and Telegraph Company. Dividends on this stock, as outstanding from time to time, have been paid in every year since 1881 at the rate of at least 8% per annum, which is the present rate.

The Mortgage will provide for sinking fund payments to a trustee at the rate of $250,000 semi-annually, beginning December 1, 1923, such payments to be used in purchasing Series A Bonds, if obtainable at not exceeding par and accrued interest, otherwise to be used for capital expenditures with respect to property to be covered by the Mortgage, and against which expenditures no Bonds under the Mortgage will be issuable as long as any Series A Bonds are outstanding.

The issue of the Series A Bonds has been authorized by the Illinois Commerce Commission.

The above bonds are offered for subscription, subject to due authorization and to issue as planned and to approval of legality by counsel, at 95¼% and interest, to yield over 5.30 per cent.

Subscription books will be opened at the office of J. P. Morgan & Co., at 10 o'clock A. M., Friday, June 15, 1923. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amount due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds, the date of payment to be specified in the notices of allotment, against delivery of temporary Bonds, exchangeable for definitive Bonds when received from the Company.

Chicago Telephone Company First Mortgage 5% Bonds, due December 1, 1923, with final coupon attached, will be

accepted in payment at 100% and accrued interest to date of payment.

J. P. Morgan & Co. Kuhn, Loeb & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

Dated June 15, 1923.

[fol. 3845] Illinois Bell Telephone Company

Chicago, Ill., June 14, 1923.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

DEAR SIRS: With reference to the proposed issue of $50,000,000 First and Refunding Mortgage 5% Gold Bonds, Series A, of Illinois Bell Telephone Company, I beg to give you the following information regarding the business of the Company and this issue of Bonds:

The Illinois Bell Telephone Company was organized in 1881 under the laws of the State of Illinois, under the name of Chicago Telephone Company. Its name was changed in 1920, when the Company acquired all the property of the Central Union Telephone Company located within the State of Illinois. The Company does all of the telephone business in the City of Chicago and owns and operates a comprehensive system of exchanges and toll lines serving, with its connecting companies, practically the entire State of Illinois with the exception of a small territory in and around East St. Louis. In addition, it serves a small part of the State of Indiana. It connects for interchange of traffic with all other companies of the Bell System throughout the United States and with telephone systems in Canada and Cuba. On March 31, 1923, there were 925,888 telephone stations directly owned by the Company and 352,115 stations operated by local connecting companies under agreements with this Company for the interchange of business. The population served is estimated at 6,850,000.

Upon the satisfaction forthwith of the underlying debt as stated below, and the retirement of $15,530,179 three-year 5% unsecured notes of the Company, from the proceeds of the sale of these Bonds, the $50,000,000 Series A Bonds will constitute the sole funded debt of the Company. In comparison therewith, the book cost of the Company's real

estate, buildings and telephone plant was approximately $133,000,000 on March 31, 1923, and the total assets amounted to over $143,000,000, which figures will be substantially increased by the balance of the proceeds of this issue to be utilized for additions and betterments. The present value of the Company's property is greatly in excess of its book cost.

The gross revenues, net earnings (after deducting operating expenses, Federal and other taxes, rentals and miscellaneous income charges), interest charges and net income of the Illinois Bell Telephone Company during the past ten years have been as follows:

Year Ended December 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges	Net Income
1913	$15,551,536	$3,605,968	$969,414	$2,636,554
1914	16,512,418	3,523,671	953,075	2,570,596
1915	17,711,855	4,122,569	959,521	3,163,048
1916	19,769,568	4,395,750	981,165	3,414,585
1917	21,651,494	3,541,569	1,093,571	2,447,998
1918	*	4,314,084	1,079,189	3,234,895
1919	*	4,031,842	998,663	3,033,179
1920	33,361,416	2,697,843	1,271,383	1,426,460
1921	44,748,392	7,668,279	2,042,327	5,625,952
1922	48,169,798	8,425,665	2,072,036	6,353,629

Earnings prior to December 1, 1920 do not include earnings from the properties then purchased from the Central Union Telephone Company. During the past ten years the Company's net earnings available for interest have averaged over three times the interest charges and in no one of these years have they been less than twice such interest charges. During each of the years 1921 and 1922 net earnings available for interest amounted to more than three times the annual interest requirements of $2,500,000 on these Bonds. Adequate charges have been made annually against earnings for depreciation and obsolescence.

The Company has outstanding $60,000,000 par value of capital stock (to be increased under the Company's offer of May 29, 1923 to $70,000,000) more than 98% of which is owned by the American Telephone and Telegraph Company. Dividends on the stock of the Company, as outstanding from

*Property under Federal control during portion of year.

time to time, have been paid in every year since 1881 at the rate of at least 8% per annum, which is the present rate.

The situation with respect to the Company's franchises is generally satisfactory. In the greater number of municipalities in Illinois the Company is operating under franchises which have been granted for an unlimited period. A franchise for the City of Chicago was granted in 1889. In 1907, a new franchise was granted for a 22-year period, [fol. 3846] expiring in 1929, and there is no reason to believe that, at its expiration, it will not be renewed on a satisfactory basis. The existing franchise contains a provision giving the City the right, at the expiration of this franchise, upon giving twelve months' previous notice, to purchase the property of the Company located within the limits of the City, paying therefor in cash the cost of duplication at that date less depreciation, but without allowance for earning power or franchise value. On March 31, 1923, the book cost of the physical property of the Company located within the City of Chicago was in excess of $92,000,000, which cost is much less than the present value of the property.

The Bonds are to be issued under a First and Refunding Mortgage to be dated June 1, 1923, to First Trust and Savings Bank, Chicago, as Trustee, covering all the real estate, buildings and telephone plant of the Company in the State of Illinois, now owned or hereafter acquired, with the exception of certain property, formerly constituting a part of the Kinloch telephone system, recently acquired from the Southwestern Bell Telephone Company at a cost of approximately $843,000. Arrangements have been made to satisfy the mortgage securing $19,004,000 First Mortgage 5% Bonds due December 1, 1923 (issued under the name of Chicago Telephone Company) and two small mortgages aggregating $320,000 due within the next four years, so that the First and Refunding Mortgage will be a first lien on the property covered by the Mortgage.

The amount of bonds authorized to be issued under the First and Refunding Mortgage will be limited so that the amount thereof at any time outstanding (when added to the outstanding amount of any obligations which may hereafter become underlying bonds, under the terms of the Mortgage, through the purchase of property subject to debt) shall not exceed twice the amount of the then outstanding

capital stock. Subject to the above limitation in amount, bonds will be issuable for the acquisition of additional property necessary or useful in connection with the business of the Company (including stocks, bonds and securities of other corporations) and for betterments; but if at any time the amount of outstanding bonds secured by this Mortgage, when added to the prior bonded debt (if any) of the Company, shall exceed the amount of the then outstanding capital stock, additional bonds will be issuable for not exceeding 75% of the expenditures for such additional property and betterments. The issue of bonds in respect of stock and other securities will be limited so that not more than one-third of the security under the Mortgage shall consist of stock and unsecured obligations of other corporations.

The Mortgage is further to provide that so long as the Series A Bonds are outstanding, no bonds will be issuable, except for refunding, unless the net earnings of the Company available for interest charges during any twelve consecutive months out of fifteen months immediately preceeding the proposed issue, shall have been not less than one and three-fourths times the interest during such period on the Company's outstanding bonded debt, as defined in the Mortgage, plus the amount of interest for twelve months on the bonds proposed to be issued. The bonds issuable under the Mortgage may be of several series and may vary as to interest rates, maturity dates, sinking fund and other provisions as may be determined by the Company from time to time.

The Series A Bonds, limited to the above-mentioned principal amount of $50,000,000, will be dated June 1, 1923, and will mature June 1, 1956. They will bear interest from June 1, 1923, at the rate of 5% per annum, payable semi-annually on June 1, and December 1. Principal and interest will be payable at the office or agency of the Company in Chicago, Illinois or, at the option of the holder, in New York City. The Bonds will be in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000. The Coupon Bonds and registered Bonds and the several denominations will be interchangeable. The Bonds may be rendeemed at the option of the Company, in whole but not in part, upon 60 days' notice, on June 1, 1929, or

on any interest date thereafter, at the following prices with accrued interest: if on or prior to December 1, 1952, at 105%, and if subsequent to December 1, 1952, at par.

The Mortgage will provide for sinking fund payments to a trustee at the rate of $250,000 semi-annually, beginning December 1, 1923, such payments to be used in purchasing Series A Bonds, if obtainable at not exceeding par and accrued interest, otherwise to be used for capital expenditures with respect to property to be covered by the lien of the Mortgage. If Bonds are purchased for the full amount of the sinking fund payments, not less than $16,000,000 principal amount of the Series A Bonds will be retired by maturity, while the portion of the sinking fund not used in the purchase of such Bonds will be invested in property against which no Bonds under this Mortgage will be issuable as long as any Series A Bonds are outstanding.

Application will be made to list the Bonds on the New York and on the Chicago Stock Exchanges.

The issue of the Series A Bonds has been authorized by the Illinois Commerce Commission

Yours very truly, W. R Abbott, President.

[fol. 3847] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #146

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1919

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	12 Mos. This Year
23	Net Telephone Earnings	11,802,577
24	Sundry Net Earnings	720,495
25	Total Net Earnings	12,523,072
26	Deduct Interest	43,855
27	Balance Net Profits	12,479,217
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	
30	Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
31	Average Plant in Service	72,492,359
32	Average Number of Company Stations	347
33	Average Capital Obligations	73,233,468
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
36	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
37	Total Telephone Revenues to Average Plant in Service	43.29%
38	Operation Expenses to Telephone Revenues	29.84%
39	Telephone Expenses to Telephone Revenues	62.39%
40	Current Maintenance to Average Plant in Service	5.86%
41	Depreciation to Average Plant in Service (Includes 261)	5.60
42	Net Telephone Earnings to Average Plant in Service	16.28%
43	Total Net Earnings to Average Capital Obligations	
44	Balance Net Profits to Average Capital stock	

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[fol. 3848] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #149

Monthly Report 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1920

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
23	Net Telephone Earnings	14,715,118
24	Sundry Net Earnings	488,782
25	Total Net Earnings	15,203,900
26	Deduct Interest	49,136
27	Balance Net Profits	15,154,764
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	

30 Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

		l 12 Mos. This Year
	Averages:	
31	Average Plant in Service	80,123,645
32	Average Number of Company Stations	329
33	Average Capital Obligations	75,090,891
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	47.60%
38	Operation Expenses to Telephone Revenues	33.07%
39	Telephone Expenses to Telephone Revenues	61.42%
40	Current Maintenance to Average Plant in Service	6.69%
41	Depreciation to Average Plant in Service (Includes 261)	4.43%
42	Net Telephone Earnings to Average Plant in Service	18.37%
43	Total Net Earnings to Average Capital Obligations	.....
44	Balance Net Profits to Average Capital Stock	.....

[fol. 3849] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #152

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
23	Net Telephone Earnings	14,159,630
24	Sundry Net Earnings	648,778
25	Total Net Earnings	14,808,408
26	Deduct Interest	18,912
27	Balance Net Profits	14,789,496
28	Deduct Dividends (Paid and Accrued)	.....
29	Undivided Profits	.....
30	Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.	

	Averages:	l 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	88,127,267
32	Average Number of Company Stations	328
33	Average Capital Obligations	84,660,979
34	Average Capital Stock	.....
35	Av. Mo. Tel. Rev. per Station—Gross	.....
36	—Net	.....

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	43.19%
38	Operation Expenses to Telephone Revenues	32.23%
39	Telephone Expenses to Telephone Revenues	62.80%
40	Current Maintenance to Average Plant in Service	5.89%
41	Depreciation to Average Plant in Service (Includes 261)	4.20
42	Net Telephone Earnings to Average Plant in Service	16.07%
43	Total Net Earnings to Average Capital Obligations	.....
44	Balance Net Profits to Average Capital Stock	.....

[fol. 3850] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #155

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
23	Net Telephone Earnings	16,971,835
24	Sundry Net Earnings	395,688
25	Total Net Earnings	17,367,523
26	Deduct Interest	26,699
27	Balance Net Profits	17,340,824
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	
30	Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.	

	Averages:	l 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	98,653,730
32	Average Number of Company stations	326
33	Average Capital Obligations	69,850,075
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
36	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	44.05%
38	Operation Expenses to Telephone Revenues	30.33%
39	Telephone Expenses to Telephone Revenues	60.94%
40	Current Maintenance to Average Plant in Service	5.52%
41	Depreciation to Average Plant in Service (Includes 261)	4.24%
42	Net Telephone Earnings to Average Plant in Service	17.20%
43	Total Net Earnings to Average Capital Obligations	
44	Balance Net Profits to Average Capital Stock	

[fol. 3851] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #158

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1923

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
23	Net Telephone Earnings	17,751,881
24	Sundry Net Earnings	365.795
25	Total Net Earnings	18,117,676
26	Deduct Interest	56,674
27	Balance Net Profits	18,061,002
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	
30	Annual Dividend Rate —Com. —%; Pref. —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.	

	Averages:	l 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	107,936,381
32	Average Number of Company Stations	324
33	Average Capital Obligations	96,438,691
34	Average Capital Stock (Common)	
35	Av. Mo. Tel. Rev. per Station—Gross	
36	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	43.77%
38	Operation Expenses to Telephone Revenues	30.91%
39	Telephone Expenses to Telephone Revenues	62.42%
40	Current Maintenance to Average Plant in Service	5.85%
41	Depreciation to Average Plant in Service (Includes 261)	4.26%
42	Net Telephone Earnings to Average Plant in Service	16.45%
43	Total Net Earnings to Average Capital Obligations	
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	

[fol. 3852] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT # 161

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	18,287,831
25	Sundry Net Earnings	256,636
26	Total Net Earnings	18,544,467
27	Deduct Interest	29,544
28	Balance Net Profits	18,514,923
29	Deduct Dividends (Paid and Accrued)	.....
30	Undivided Profits	.....
31	Annual Div. Rate Com.—%; Pref.—%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.	
		l 12 Mos. This Year
	Averages:	
32	Average Plant in Service (Excludes Gen'l. Equipment)	124,235,019
33	Average Number of Company Stations	315
34	Average Capital Obligations	112,059,370
35	Average Capital Stock (Common)	.....
36	Av. Mo. Tel. Rev. per Station—Gross	.....
37	—Net	.....
		q 12 Mos. This Year
	Percentages (Annual Basis):	
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	39.10%
39	Operation Expenses to Telephone Revenues	29.20%
40	Telephone Expenses to Telephone Revenues	62.35%
41	Current Maintenance to Average Plant in Service	4.85%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.40%
43	Net Telephone Earnings to Average Plant in Service	14.72%
44	Total Net Earnings to Average Capital Obligations	.....
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	.....

[fol. 3853] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #164

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1925

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	22,248,554
25	Sundry Net Earnings	353,975
26	Total Net Earnings	22,602,529
27	Deduct Interest	49,738
28	Balance Net Profits	22,552,791
	Deduct Dividends (Paid & Accrued):	
29	Preferred	.....
30	Common	.....
31	Total Dividends	.....
32	Undivided Profits	.....
33	Annual Div. Rate-Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	.....

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	138,333,760
35	Average Number of Company Stations	305
36	Average Capital Obligations	124,515,612
37	Average Capital Stock (Common)	.....
38	Av. Mo. Tel. Rev. per Station—Gross	.....
39	—Net	.....

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	40.13%
41	Operation Expenses to Telephone Revenues	26.63%
42	Telephone Expenses to Telephone Revenues	59.92%
43	Current Maintenance to Average Plant in Service	4.66%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.99%
45	Net Telephone Earnings to Average Plant in Service	16.08%
46	Total Net Earnings to Average Capital Obligations	.....
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	.....

[fol. 3854] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #167

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1926

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	22,040,981
25	Sundry Net Earnings	562,089
26	Total Net Earnings	22,603,070
27	Deduct Interest	45,042
28	Balance Net Profits	22,558,028
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31, last, —	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	152,567,363
35	Average Number of Company Stations	305
36	Average Total Assets	174,128,377
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	39.94%
41	Operation Expenses to Telephone Revenues	29.05%
42	Telephone Expenses to Telephone Revenues	63.83%
43	Current Maintenance to Average Plant in Service	4.96%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.11%
45	Net Telephone Earnings to Average Plant in Service	14.45%
46	Total Net Earnings to Average Total Assets	12.98%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3855] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #170

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1927

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	22,567,295
25	Sundry Net Earnings	599,668
26	Total Net Earnings	23,166,963
27	Deduct Interest	43,378
28	Balance Net Profits	23,123,585
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate-Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31, last, —.	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	183,464,703
35	Average Number of Company Stations	65
36	Average Capital Obligations	
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	36.74%
41	Operation Expenses to Telephone Revenues	31.31%
42	Telephone Expenses to Telephone Revenues	66.52%
43	Current Maintenance to Average Plant in Service	4.68%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.20%
45	Net Telephone Earnings to Average Plant in Service	12.30%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3856] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #173

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1928

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	29,126,342
25	Sundry Net Earnings	627,425
26	Total Net Earnings	29,753,767
27	Deduct Interest	41,383
28	Balance Net Profits	29,712,384
	Deduct Dividends (Paid & Accrued):	
29	Preferred	.....
30	Common	.....
31	Total Dividends	.....
32	Undivided Profits	.....
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	217,023,334
35	Average Number of Company Stations	85
36	Average Capital Obligations	.....
37	Average Capital Stock (Common)	.....
38	Av. Mo. Tel. Rev. per Station—Gross	.....
39	—Net	.....

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	38.23%
41	Operation Expenses to Telephone Revenues	29.60%
42	Telephone Expenses to Telephone Revenues	64.89%
43	Current Maintenance to Average Plant in Service	5.16%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.27%
45	Net Telephone Earnings to Average Plant in Service	13.42%
46	Bal. Net Prof. (After Pref. Dividend) to Av. Com. Stock	.....

[fol. 3857] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #176

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	32,273,298
25	Sundry Net Earnings	1,198,056
26	Total Net Earnings	33,471,354
27	Deduct Interest	518,129
28	Balance Net Profits	32,953,225
	Deduct Dividends (Paid & Accrued):	
29	Preferred	.....
30	Common	.....
31	Total Dividends	.....
32	Undivided Profits	.....
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	.....

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	268,328,189
35	Average Number of Company Stations	77
36	Average Capital Obligations	.....
37	Average Capital Stock (Common)	.....
38	Av. Mo. Tel. Rev. per Station—Gross	.....
39	—Net	.....

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	36.23%
41	Operation Expenses to Telephone Revenues	29.76%
42	Telephone Expenses to Telephone Revenues	66.88%
43	Current Maintenance to Average Plant in Service	5.29%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.22%
45	Net Telephone Earnings to Average Plant in Service	12.03%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	.....

[fol. 3858] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 179

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1930

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	29,115,662
25	Sundry Net Earnings	1,812,367
26	Total Net Earnings	30,928,029
27	Deduct Interest	38,853
28	Balance Net Profits	30,966,882
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	352,601,683
35	Average Number of Company Stations	77
36	Average Capital Obligations	
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	28.23%
41	Operation Expenses to Telephone Revenues	33.48%
42	Telephone Expenses to Telephone Revenues	70.75%
43	Current Maintenance to Average Plant in Service	4.30%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.11%
45	Net Telephone Earnings to Average Plant in Service	8.26%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3859] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 188

Western Electric News, May, 1930

Many of the outstanding peculiarities of Western Electric methods of operation are natural consequences of its close affiliation with the A. T. & T. Company and its associated operating telephone companies. Such affiliation between organizations engaged in different stages of the industrial process is what the economist calls vertical integration. Examples of vertical integration in other fields are:

(a) Steel companies which own coal mines, ore lands, boats to carry ore on the lakes, and coke ovens as well as steel mills of various types.

(b) Oil producing, refining and marketing combinations.

(c) Chain stores which purchase direct from factories or even themselves own factories, in the first case combining the functions of retailer and wholesaler and in the second case, the functions of retailer, wholesaler and manufacturer.

(d) Copper mining and refining companies which also own wire drawing plants, brass works, and other fabricating units.

The question as to whether such integration is or is not desirable from the general economic standpoint is illuminated by the experience of the Western Electric Company. As we know from our daily contacts, the identity of the interests of the Western Electric Company with those of our chief customers makes unnecessary much risk-taking and much expenditure of money and energy that inevitably [fol. 3860] occur when each successive step from raw material to service rendered yields a profit for a different set of stockholders. As a natural result of these savings, Western Electric prices to Bell Telephone Companies are distinctly lower than the prices of other telephone manufacturers to non-Bell telephone companies. Or, putting it another way, the margin between cost of raw material and essential labor and the selling price of the product is relatively small.

Specific ways in which integration results in real savings are as follows:

1. Sales effort in the ordinary sense is dispensed with. In a sense, Western Electric products are sold before they are manufactured. Representatives of the telephone companies know that the designs have been worked out by the Bell Laboratories and approved by the general departments of the A. T. & T. Company as the best for the purpose. Where material of several designs is produced, the Western Electric representative has no object in urging one over the other and is free to pool his technical knowledge with that of the telephone company's representative.

P. 56:

2. Continuity in engineering and production schedules is secured by cooperation with the telephone companies. If the preliminary lineup calls for peaks and valleys during the next year or two, arrangements are made with the telephone companies to rearrange the dates of enough projects to smooth out the schedule. As a result, the plant investment required by the Western Electric Company is low in relation to sales volume.

3. Profit above a fair rate of return on investment is eliminated.

4. Losses due to production of items which later prove unacceptable to the ultimate consumer are minimized.

5. Opportunities within the system are provided for all types of employees. A man who starts in one company may be transferred to another company or to another de- [fol. 3861] partment which requires a distinctly different type of personal qualifications.

In addition to integrating public utility operation and equipment manufacturing, the Western Electric Company also exemplifies integration of manufacturing and acting as purchasing agent. An important advantage of this sort of integration as exemplified by the Western Electric Company is that, as purchasing agent, the company can obtain better prices and terms than if it were not known that we may, as an alternative, manufacture ourselves. Our own familiarity, moreover, with manufacturing processes en-

ables us to discuss more effectively with outside producers what is really a fair price.

Space does not permit full discussion of the third way in which the Western Electric Company can serve the economist as a specimen; namely, the advantages of research work.

It is an accepted operating principle of the Bell System and other progressive organizations that every item of equipment and every method is subject to improvement. Research of the engineering type is fairly common in these days. In the Bell System and several other leading concerns, however, this work has been extended to underlying physical, chemical and mathematical problems with a definite realization that it is worth while to conquer the unknown in connection with the broad field in which particular investigations have been made, even though the particular study may not have an immediate dollars and cents value. In the Western Electric Company, the spirit of research has also been carried into methods of manufacture, sources and proper prices of raw materials and supplies and all methods of operation.

[fol. 3862] DEPOSITION EXHIBIT #189

2/9/32.

Patents & Patent Applications Costing $1,000 or More Purchased by the Western Electric Company, Inc., 1909 to 1930

Year Purchased	Purchased from	Amount Paid
1909		
1910		
1911	Lorimer Lundquist	650,000
1912	Stromberg Carlson Telephone Mfg. Co.	175,000
1913	American Automatic Co.	75,000
1913	Clement International Engineering Corp.	65,000
1916	J. W. Lattig	1,000
1916	North Electric Co.	350,000
1916	G. Deakin	3,500
1917	Automatic Construction Co.	5,000
1917	C. L. Goodrum	1,000
1917	F. O. Richey	1,000
1917	DeForrest Tel. & Tel. Co.	250,000
1918	F. B. Cook	25,000
1918	Thomas H. Phillips Co.	30,000
1918	Olsson and Pleijel	25,000
1919	F. S. Hurd	5,000
1920	F. D. Pearne	10,000
1921	A. E. Lundell	1,000
1921	C. D. Babcock & J. Neilson	7,500
1921	J. L. Wright	1,490
1925	W. S. Webster	1,000

Year Purchased	Purchased from	Amount Paid
1925	Myron F. Hill	1,000
1928	Edwin G. Gaynor	5,000
1929	Charlotte Aldendorff	48,000
1929	Else Hecht	2,000
1929	James W. Shope	20,000
1930	Thomas H. Berkland	1,200
1930	Trowbridge & Duryea	4,700
1930	Fred H. Strom	11,000
	Total	$1,775,390

[fol. 3863] DEPOSITION EXHIBIT #190

2/9/32.

Document Testified to by Witness Folk, Entitled "Licenses Costing $1,000 or More, Paid by Western Electric to Others Than A. T. & T., 1909–1930"

Year Purchased	Purchased from	Amount Paid
1909		
1910		
1911		
1912	North Electric Co.	$375,000
1914	Kellogg Switchboard & Supply Co.	250,000
1916	E. R. Parker	27,290
1916	F. C. Brown	5,000
1916	Automatic Electric Co.	1,560,000
1916	Stromberg Carlson Telephone Mfg. Co.	75,000
1916	Sumter Telephone Supply Co.	1,000
1917	Automatic Electric Co.	190,000
1917	Herzog Tel. Systems Co.	29,000
1918	Automatic Electric Co.	200,000
1919	Automatic Electric Co.	50,000
1919	Corwin Telephone Co.	3,500
1920	General Railway Signal Co.	15,000
1920	Hall Switch and Signal Co.	55,000
1921	Hubert S. Turner	3,500
1923	Madsenell Corp.	10,000
1924	Frank E. Miller	1,000
1925	Thomson Electric Welding Co. and Thomson Spot Welder Co.	6,000
1926	Harold H. Brown	25,000
1926	Frank E. Miller Radio Corp.	10,000
1926	Cutler Hammer Mfg. Co.	15,000
1927	B. F. Goodrich	30,000
1928	Manhattan Electrical Supply Co.	1,000
1929	American Hardware Corp.	3,000
1929	Dubilier Condenser Corp.	100,000
1929	Manhattan Electrical Supply Co.	5,000
1929	Radio Patents Corp.	7,500
1929	Robert T. Romine	1,500
1930	Herbert M. Friendly	550,000
1930	General Electric Co.	5,000
1930	General Electric Co.	1,500
1930	Hazeltine Corp.	10,000
1930	A. D. Pettee	1,500
1930	Radio Corp. of America	2,000
1930	Radio Corp. of America	2,500
1930	Russell Mfg. Co.	1,000
	Total	$3,627,790

[fol. 3864] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 3477
No. 191

Document Testified to by Witness Folk, Entitled, "Federal Trade Commission, Radio Industry"

REPORT

OF THE

FEDERAL TRADE COMMISSION

ON THE

RADIO INDUSTRY

IN RESPONSE TO HOUSE RESOLUTION 548
SIXTY-SEVENTH CONGRESS
FOURTH SESSION

DECEMBER 1, 1923

WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

FEDERAL TRADE COMMISSION.

HUSTON THOMPSON, *Chairman.*
VERNON W. VAN FLEET.
NELSON B. GASKILL.
VICTOR MURDOCK.
JOHN F. NUGENT.
OTIS B. JOHNSON, *Secretary.*

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ACKNOWLEDGMENT.

The commission desires to mention as contributing to the preparation of this report Mr. H. L. Anderson, Assistant Chief Examiner, and Mr. Joseph L. Klein, of the legal investigating division.

LETTER OF SUBMITTAL.

FEDERAL TRADE COMMISSION,
Washington, December 1, 1923.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: There is submitted herewith a report by the Federal Trade Commission setting forth certain facts with respect to the radio industry. The report contains the results of the investigation made pursuant to House Resolution 548, Sixty-seventh Congress, fourth session.

An attempt has been made to collate the data with respect to the various phases of the inquiry as outlined by Congress in the resolution. In Chapter I the facts concerning the development of the industry are presented, which includes the organization of the Radio Corporation of America, the most important factor in the industry. In Chapter II the agreements between the various companies respecting the hundreds of patents covering radio devices and apparatus are discussed, which agreements are set out in full in the Appendix. In Chapter III is discussed the various traffic agreements respecting international radio communication and which are also set out in full in the Appendix. Chapter IV is devoted to a discussion of the practices relative to the manufacture, sale, and use of radio apparatus and parts. This naturally includes an outline of the sales policy of the Radio Corporation and the facts as to its sale of vacuum tubes, which product has been termed the heart of radio.

The commission desires to call attention to certain facts disclosed by the investigation which may be summarized as follows:

The Marconi Wireless Telegraph Co. of America was the first company in America formed for the purpose of engaging in the transmission of messages by wireless. It was organized November 22, 1899, with a capitalization of $10,000,000, of which about 25 per cent was owned by the Marconi's Wireless Telegraph Co. (Ltd.), a British corporation.

In the United States and Territories this concern had the exclusive right to use and exploit the patents controlled by the British Marconi Co., among which were the important Fleming tube patents. The Marconi Co. erected high-power wireless stations at New Brunswick, N. J., Belmar, N. J., Marion, Mass., Chatham, Mass., Bolinas, Calif., Marshall, Calif., Kahuku, Hawaii and Kokohead, Hawaii. In the ship-to-shore communication business it practically had a monopoly when it was taken over by the Radio Corporation in 1919. Some of the wireless apparatus used was manufactured at its plant at Aldene, N. J., where it also manufactured radio parts, which it sold to amateurs and experimenters in radio, while the equipment for its high-power stations was purchased from the British Marconi Co.

There were only two other companies in the United States engaged in the operation of a radio communication service—the United Fruit Co. and the Federal Telegraph Co. The United Fruit Co., which operates a fleet of vessels in connection with its tropical fruit business between the United States, the West Indies, Central and South America, obtained a few radio patents and a license from the Marconi Co. under certain of its patents. Its vessels were equipped with wireless apparatus and stations were erected in Boston, Mass., New Orleans, La., and a few points in Central America from which a commercial service was maintained. The Federal Telegraph Co. of California was organized in 1911 and operated a ship-to-ship and ship-to-shore service on the Pacific coast.

Prior to the war, broadcasting for entertainment purposes had not been developed and the radio apparatus required in receiving and transmitting sets were sold to the concerns engaged in the communication field, the United States Government, and amateurs and experimenters in the radio art. The principal manufacturers of apparatus and parts were the Marconi Co. of America, Federal Telegraph Co., De Forest Radio Telephone & Telegraph Co., and the Wireless Specialty Apparatus Co., a subsidiary of the United Fruit Co. None of these concerns manufactured what is now termed the modern vacuum tube and which is considered so essential by the industry. Only the Marconi and De Forest companies manufactured vacuum tubes, which because of certain defects were not considered of much importance. The De Forest Co. manufactured tubes for only a short time, since it was infringing the Fleming tube patents of the Marconi Co. The device then used for rectifying purposes was the crystal. Crystals and crystal receiving sets, efficient for short communication, were manufactured chiefly by the Wireless Speciality Apparatus Co. The Federal Telegraph Co. manufactured the Poulsen arc, which is used in high-power stations, for its own use and sale to ship owners and the Government. The three important manufacturers of electrical apparatus—the General Electric Co., the Western Electric Co., and the Westinghouse Electric & Manufacturing Co.—prior to the war did not sell radio apparatus, although they had done considerable research and development work. Some of the apparatus manufactured, however, was adapted for both radio and general electrical purposes.

THE RADIO CORPORATION OF AMERICA.

Although engaged primarily in the manufacture of electrical machinery and apparatus, the subject of radio was of interest to the General Electric Co., since many of its patents were also adapted to the radio art. Among its developments is the Alexanderson alternator, which is a machine for generating high-frequency current, useful especially in long-distance communication. The first of these machines was installed in 1917 at the New Brunswick, N. J., station of the Marconi Co. Shortly thereafter the British Marconi Co. commenced negotiations for the exclusive rights to the machine, but because of the war negotiations were suspended. After the signing of the armistice, negotiations were resumed but were practically concluded after a conference in April, 1919, between Rear

Admiral Bullard, Director of Communications of the Navy, Commander S. C. Hooper, of Bureau of Engineering of the Navy Department, and officials of the General Electric Co. The officials of the Navy Department suggested that an American radio corporation be formed to which the rights in this machine be sold and thus enable it to compete with British interests. A contract was proposed which provided for the organization of a company in such a manner that the control thereof would remain with American citizens. At a conference in May, 1919, with officials of the General Electric Co., Secretary Daniels stated (1) that he was in favor of Government ownership of radio, which he intended to urge upon Congress, and (2) that he doubted his power to execute such a contract except with the consent of Congress. No such authority was granted, so the contract never became effective. The General Electric Co., therefore, began negotiations for the purchase of the British Marconi Co.'s holdings in the Marconi Wireless Telegraph Co. of America with a view of organizing a new company to carry on the radio business.

The Radio Corporation of America was caused to be organized by the General Electric Co., October 17, 1919. Its original capital stock was $1,000, but at the first meeting of the stockholders was increased to $25,000,000. On December 31, 1922, there was outstanding 3,955,974 shares preferred stock, par value $5 per share, and 5,734,000 shares common stock, no par value. Of this amount the General Electric Co. owns 1,875,000 shares common and 620,800 shares preferred; the Westinghouse Electric & Manufacturing Co., 1,000,000 shares common and 1,000,000 shares preferred; and the United Fruit Co., 160,000 shares common and 200,000 shares preferred. The remainder is held largely by the former stockholders of the American Marconi Co. The companies mentioned are represented on the board of directors.

On November 20, 1919, the Radio Corporation entered into an agreement with the Marconi Wireless Telegraph Co. of America, whereby the Radio Corporation issued to the Marconi Co. 2,000,000 shares of its preferred stock in exchange for the physical properties, patents, licenses, and good will of the Marconi Co.

CROSS LICENSE AGREEMENTS.

The Radio Corporation has entered into agreements with the various companies which own or control practically all patents covering radio devices considered of importance to the art. The number of patents involved approximates 2,000. Agreements of this character have been entered into with the General Electric Co., Marconi's Wireless Telegraph Co. (Ltd.), American Telephone & Telegraph Co. and its subsidiary, the Western Electric Co., the United Fruit Co. and its subsidiary, the Wireless Specialty Apparatus Co., The International Radio Telegraph Co., the Westinghouse Electric & Manufacturing Co., and the Radio Engineering Co. of New York. With certain minor limitations, the Radio Corporation under these agreements has secured an exclusive divisible right to sell and use the radio devices covered by the patents involved or by patents which these companies may acquire before the termination of the

agreements. The agreements with the American Telephone & Telegraph Co. and the Western Electric Co. are to terminate in 1930, while the remainder are to terminate in 1945. Provision is made for the mutual exchange of information relating to radio, and, in most instances, the Radio Corporation has granted to the other company a license under its patents to make and use devices in the particular field in which the other company is interested.

The Radio Corporation, under these agreements, is made the selling company for practically all radio devices to be sold the public under the hundreds of patents involved. The General Electric Co. and the Westinghouse Electric & Manufacturing Co. are to manufacture and to sell to the Radio Corporation only these devices and apparatus, the Radio Corporation agreeing that 60 per cent of its annual requirements would be purchased from the General Electric Co. and 40 per cent from the Westinghouse Co. Until the expiration of the Fleming patents in 1922, the Radio Corporation had an absolute monopoly in the sale of vacuum tubes. On the expiration of these patents the De Forest Radio Telephone & Telegraph Co., which had retained a right to manufacture and sell, commenced the sale of such tubes to the general public. In the sale of receiving sets the Radio Corporation has competition from 17 concerns licensed under the Armstrong patents, although their sale of sets for use in conjunction with tubes is being contested in the courts at the present time. It is contended that their sale and use under the present patent situation constitutes an infringement of the tube patents of the Radio Corporation, which if upheld by the courts will prevent all competition in the sale of complete sets, since the Western Electric Co. is manufacturing and selling only transmitting apparatus for commercial purposes.

SHIP-TO-SHORE COMMUNICATION.

In communication by radio between ships at sea and the shore, the Radio Corporation is the dominant factor. Its chief competitors are the Independent Wireless Telegraph Co., Ship Owners' Radio Service Co., Wireless Co. of Port Arthur, the Gulf Radio Service operating on the Atlantic coast and the Federal Telegraph Co. and the Kilbourne & Clark Manufacturing Co. operating on the Pacific coast. The question as to the right to use tubes, the patents to which are under the control of the Radio Corporation, in apparatus furnished the ships and land stations is also involved in litigation, suit having been instituted by the Radio Corporation against the Independent Wireless Telegraph Co. on this ground. The United States District Court for the Southern District of New York recently dismissed this bill for lack of parties since the De Forest Co., the owner of the patents involved and which had retained a personal license to make and sell, was a party to the proceeding in name only. If the contention of the Radio Corporation should finally prevail, competition from the other ship-to-shore service companies will be eliminated until there is a change in the patent situation. The Tropical Radio Telegraph Co., a subsidiary of the United Fruit Co., is also engaged in a ship-to-shore service in the Caribbean Sea, but is affiliated with the Radio Corporation.

INTERNATIONAL COMMUNICATION.

The Radio Corporation is the only concern now engaged in transmitting and receiving radio messages between the United States and foreign countries and contends that in order to function properly it must of necessity secure a monopoly in this field. The company has secured a virtual monopoly and controls all the high-power stations with the exception of those owned by the Government. In addition, it has entered into traffic agreements with the various foreign Governments and radio companies, the majority of these agreements providing that all messages intended for the United States shall be transmitted only through the facilities owned by the Radio Corporation of America. Agreements of this character have been made with Marconi's Wireless Telegraph Co. (Ltd.), covering the British possessions, and the Governments of Norway, Germany, France, Poland, Sweden, and the Netherlands. An agreement of a similar character between the Marconi Co. and the Japanese Government was assumed by the Radio Corporation when it purchased the assets of the Marconi Wireless Telegraph Co. of America and traffic by radio between the countries was established. In 1921 the Radio Corporation entered into an agreement with Marconi's Wireless Telegraph Co. (Ltd.), a British concern, the Compagnie Générale de Télégraphie sans Fil, a French concern, and the Gesellschaft Fuer Drahtlose Télégraphie m. b. H., a German concern, respecting radio traffic from South American countries which agreement was afterwards extended to include Central American countries. Steps have been taken to establish service between Brazil, Argentina, Colombia, Venezuela, and the United States. This agreement was made subject to the rights of the United Fruit Co. in Cuba, Colombia, the Panama Canal Zone, and Central America, and its agreement with the Radio Corporation whereby it agreed not to establish or operate stations for wireless communication outside the allotted territory.

The Federal Telegraph Co. of California, which is engaged in a ship-to-shore communication service on the Pacific coast, in 1921 entered into a partnership agreement with the Chinese Government providing for the erection of stations in China and the establishment of a transoceanic service. This agreement was assumed by the Federal Telegraph Co. of Delaware, which was organized by the Federal Telegraph Co. of California and the Radio Corporation. An agreement between the various companies holding concessions in China was also proposed. The agreement was apparently not executed and the correspondence with the Navy Department shows that the department would oppose any agreements of this character unless they were first approved by the respective Governments. In a letter to the Secretary of State dated December 16, 1921, Mr. Denby, Secretary of the Navy, emphasizes the importance of maintaining competition in radio communication to and from China. The possibility of a monopoly in other fields than that of service is also pointed out, as is shown by the following excerpt from the letter:

> The Navy Department fears that any commitment on the part of the Government to an arrangement favorable to a monopoly by a single commercial company, though limited to a particular service, would but lend a means toward extending monopoly to other services such as development and distribution of apparatus in general, and this is considered absolutely undesirable, particularly in the field of supply and service to ships.

At the present time the Radio Corporation has in operation communication circuits with Great Britain, Norway, France, Germany, Poland, Italy, and Japan. It is expected that the station in Sweden will be completed and ready for operation within the next six months and that the station near Buenos Aires, in the Argentine, will be completed in the near future.

Because of the provisions in these various agreements providing for service through the facilities of the Radio Corporation exclusively, it is not believed that it will be possible for any other company in the United States to conduct an efficient transoceanic service. In fact, a group of newspaper publishers in the United States who sought to erect a station for the receipt of radio messages, after conducting experiments in this country, eventually built such a station at Dartmouth, Nova Scotia. This station is now being operated, its service being supplemented by virtue of an arrangement with the British Post Office. The following are members of the association operating this service:

The Chicago Tribune, New York Times, New York World, New York Herald, New York Tribune, Philadelphia Public Ledger, United Press Association of America, International News Service, and Universal Service.

The association is not exclusive and business for other newspapers is conducted at a charge of 1 cent per word.

SALE OF APPARATUS.

The refusal to sell or lease apparatus to competitors for international communication purposes is included in the well-defined policy of the Radio Corporation of America. It also affixes to the apparatus sold a license notice, the object of which is to restrict the purchaser's use of the device to amateur and experimental purposes. In supplying ships with apparatus, devices, and appliances, the ship owners are required to execute an agreement which provides that the apparatus or appliances furnished by the Radio Corporation are licensed only for use on board ships and aircraft in communications destined to or originating on such ships or aircraft.

The Radio Corporation distributes its products chiefly through wholesale concerns handling electrical supplies. In order for a distributor to handle these goods it must furnish evidence that it has the facilities for conducting a wholesale business and give an initial order amounting to not less than $25,000. Independent manufacturers of sets are not sold vacuum tubes and other patented devices for resale in connection with sets manufactured by them. This was a hardship, particularly when there was a shortage of tubes, as the dealers were unwilling to furnish them with tubes. The investigation shows that the shortage in tubes was confined to three of the six types manufactured and prevailed during 1922 and first few months of 1923. There was a marked increase in the demand for tubes as the industry developed, as is shown by the orders received by the Radio Corporation, which were as follows: 1921, 112,500; 1922, 1,583,021; and for the first nine months of 1923, 2,931,262 tubes. Although the officials of the Radio Corporation admit that they do not carry dealers who confine their orders to tubes exclusively, there is little evidence that the Radio Corporation required dealers to handle their goods

exclusively or favored such dealers in the supply of tubes, as compared with dealers who also handled apparatus manufactured by others.

The De Forest Radio Telephone & Telegraph Co., which is now engaged in the manufacture and sale of a modern vacuum tube, also affixes to its product notices with respect to use similar to those used by the Radio Corporation. This company has recently adopted the policy of making the distributors of its products, agents.

The commission submits no conclusions in this report as to whether the facts disclosed constitute a violation of the antitrust laws, as the House resolution under which the report was prepared called only for the facts and data "as in the opinion of the commission may aid the House of Representatives in determining whether * * * the antitrust statutes of the United States have been, or now are, being violated * * *: and such other facts as in the opinion of the commission may aid the House in determining what further legislation may be advisable."

By direction of the commission.

VERNON W. VAN FLEET,
Acting Chairman.

RADIO INDUSTRY.

CHAPTER I.

DEVELOPMENT OF INDUSTRY.

Section 1. Cause of inquiry.

At the last session of Congress some time was spent in considering legislation with reference to the radio industry. In considering House bill 13773, there was developed some evidence indicating that the radio art was being restricted by the acquisition of the basic patents on radio by closely affiliated interests. It was also charged that because of agreements between the manufacturers and distributors of radio apparatus, competition was eliminated, the sale of apparatus was restricted, and that the resale price of instruments and radio parts was maintained. The main cause of these complaints was no doubt the inability of manufacturers of receiving sets and dealers to obtain an adequate supply of vacuum tubes. With respect to the transmission of messages by radio, it was contended that exclusive rights had been granted certain parties which resulted in the elimination of competition in service in the localities covered by such contracts.

House bill 13773 was an act to amend the 1912 law[1] regulating radio communication. The bill passed the House of Representatives but was not reported out by the Committee on Interstate Commerce of the Senate, to which it was referred. The main objects of the bill were to give to the Secretary of Commerce the authority to classify and license radio stations, assign bands of wave lengths, and to prescribe regulations applicable to all licensed stations. However, the following provision of the bill is significant:

> The Secretary of Commerce is hereby authorized to refuse a station license to any person, company or corporation, or any subsidiary thereof, which, in the judgment of the Secretary, is monopolizing or seeking to monopolize radio communication, directly or indirectly, through the control of the manufacture or sale of radio apparatus or by any other means. The granting of a license shall not estop the United States from prosecuting such person, company or corporation for a violation of the law against monopolies or restraint of trade.

It was the opinion of the House Committee on the Merchant Marine and Fisheries, which drafted the bill mentioned above, that more detailed information should be secured with respect to other phases of the general subject of radio, so that it could determine whether unlawful agreements or practices were being used and, if necessary, additional legislation recommended. It was with this object in view that the resolution was introduced in Congress under

[1] U. S. Comp. Stats., secs. 10100–10109.

which this investigation was made by the commission. The resolution is as follows:

Resolved, That the Federal Trade Commission be, and it is hereby, requested to investigate and to report to the House of Representatives at the convening of the Sixty-eighth Congress, or as soon thereafter as practicable, the facts relating to (*a*) the ownership of patents covering radio apparatus used in interstate and/or foreign commerce and to all assignments or other contracts concerning such patents; (*b*) contracts, leases, or agreements in whatsoever form the same may be, or practices, the purpose, tendency, or effect of which is to control or restrict the manufacture, sale, resale, or use within the United States of such radio apparatus or to control or fix the price therefor; (*c*) contracts, leases, or agreements in whatsoever form the same may be, or practices, the purpose, tendency, or effect of which is to give exclusive rights or special privileges in the reception and transmission in interstate and/or foreign commerce of messages by radio; and (*d*) such other facts, as in the opinion of the commission, may aid the House of Representatives in determining whether, in the foregoing respects or otherwise on this or related subjects, the antitrust statutes of the United States have been or now are being violated by any person, company or corporation subject to the jurisdiction of the United States; and (*e*) such other facts as in the opinion of the commission may aid the House in determining what further legislation may be advisable.[2]

Section 2. Scope of investigation.

The attention of the Federal Trade Commission was first directed to the radio industry and particularly to the activities of the Radio Corporation of America and its associated companies by the filing of an application for a complaint with the commission in 1922. The charge in the application was that the General Electric Co. and others had set up the Radio Corporation as a bogus independent, and by the use of tying contracts and price discrimination in the sale of its products was attempting to acquire a monopoly in the manufacture and sale of radio apparatus. The importance of the radio industry and the public interest in the question of a monopoly therein were then apparent, so that the commission of its own initiative secured the facts regarding the reported combination in the radio field. This included information as to the interchange of patent licenses and agreements between the General Electric Co., Westinghouse Electric & Manufacturing Co., Western Electric Co. (Inc.), American Telephone & Telegraph Co., Wireless Specialty Apparatus Co., United Fruit Co., and the Radio Corporation of America.

The investigation as outlined above was practically complete when the request of Congress was made—March 3, 1923. It was apparently the intention of Congress that complete facts as to the entire industry should be secured, so that it was necessary to widen the scope of the previous investigation. The investigation centers around the Radio Corporation of America, which constitutes the most important factor in the industry, and in view of this fact a special effort was made to secure complete data with respect to its patents, contracts, leases, and practices.

While making the investigation the commission received several complaints as to conditions existent in the industry, especially as to the manufacture and sale of vacuum tubes. Some of the complaints of this character were that the Radio Corporation was curtailing its output of tubes for the purpose of hindering the manufacture and sale of radio apparatus, such as receiving sets, by its competitors;

[2] H. Res. 548, Sixty-seventh Cong., fourth session.

that its sale of tubes was being limited to dealers handling its other apparatus; and, that dealers selling tubes below the customary price were not sold any more goods. Particular attention was given all complaints of this nature as well as other statements made by the competitors of the Radio Corporation in both the communication and sale of apparatus fields. Many of these parties were interviewed and in addition a questionnaire was sent to 75 manufacturers of receiving sets who were requested to furnish facts with respect to sales and their experience in the business.

Statements were secured from the officials and experts of the leading companies as well as Government officials familiar with the industry, although no attempt has been made to analyze the technical questions presented, for example, the conflicting claims with respect to the patents owned by the various companies prior to the formation of the Radio Corporation of America. The information secured from these sources relate particularly to the effect of the contracts, leases, and other agreements involved and the manner in which they had been carried out.

Section 3. Status prior to war.

In 1895 G. Marconi discovered a system which greatly increased the distance over which one could transmit and detect electric waves. This system became known as the Marconi System of Wireless Telegraphy. It was patented in 1896 in Great Britain and other countries, and for the exploitation thereof and other patents useful in radio Marconi's Wireless Telegraph Co. (Ltd.) was organized in Great Britain July 29, 1897.

The first company to be formed in the United States for the purpose of engaging in the radio business was the Marconi Co. of America, which was organized under the laws of the State of New Jersey on November 22, 1899. It was capitalized for $10,000,000, divided into 2,000,000 shares of the par value of $5 each, of which the Marconi's Wireless Telegraph Co. (Ltd.) owned 447,340 shares. It had the sole right to use and exploit the Marconi patents and those of Lodge, Pupin, Edison, Fleming, Weagant, Shoemaker, Fessenden, Butcher, Gray, Dunwoody, Franklin, and patents owned by the National Electric Signaling Co. of Pittsburgh, Pa., in the United States and its territories. Until 1912 the Marconi Co. of America did not operate any high-power stations for the transmission of commercial transoceanic messages. Its principal business was supplying ships with radio service. For this purpose it had erected and operated about 60 land stations for communicating with ships at sea including a high-power station at Cape Cod capable of transmitting messages to ships at sea at a distance of 2,000 miles. As part of this service it rented radio apparatus to the ships using its service and on December 31, 1915, owned and operated the wireless apparatus on over 400 ships of the mercantile marine. This apparatus it manufactured in its plant located at Aldene, N. J., where it also manufactured a number of component parts, used in assembling radio sets, which it sold to amateurs and experimenters in radio.

In 1913 the company completed its high-power station at New Brunswick, N. J., for the transmission of transoceanic radio messages and began the construction of other high-power stations along the Atlantic

and Pacific coasts. As will hereafter be more fully explained (see p. 26), it is claimed that for efficient transoceanic communication purposes a device known as a three-element tube is required. Under its Fleming patent the Marconi Co. could manufacture a two-element tube, but the third element was covered by a patent controlled by the American Telephone & Telegraph Co. In order, therefore, to enable it to conduct its transoceanic business, a supply of such tubes was obtained from the Western Electric Co., the manufacturing subsidiary of the American Telephone & Telegraph Co. It began the transmission of messages from stations on the Pacific coast, but from the time it operated its stations on the Atlantic coast until they were taken over by the Government during the war, it did not transmit any commercial messages across the Atlantic Ocean.

Subsequent to the formation of the Marconi Co. of America, the Telefunken Co., a German-controlled concern, erected a high-power station at Sayville, Long Island, while a French company had erected for it by the German company a high-power station at Tuckerton, N. J. These three companies were the only ones operating high-power stations for transoceanic communication purposes at the time.

Reliable commercial transoceanic radio communication had not yet been established, due to the lack of apparatus which would enable messages to be transmitted continuously and efficiently across the Atlantic, so that the cable companies with their 17 cables retained the greater portion of the trans-Atlantic business. All these cables originated in the United States and most of them terminated in Great Britain and France. For a long time radio apparatus and systems were used chiefly for wireless communication between ships at sea and between ships and the shore and in this branch of the industry the Marconi Co. of America had a practical monopoly. There were at the time only two other companies in the United States operating a similar service, the United Fruit Co. and Federal Telegraph Co. The United Fruit Co., which is engaged in the production, transportation, and distribution of tropical fruit, and in connection therewith owns and operates a fleet of vessels, obtained a few patents on radio devices and a license from the Marconi Co. of America under its patents. It erected land stations at New Orleans, La., Boston, Mass., and at a few points in Central America, installed apparatus on board its ships and maintained a wireless system to points on the Caribbean Sea. As its system became more efficient it opened its stations to the public for the transmission of commercial messages within the territory served by it. The Federal Telegraph Co. of California was organized under the laws of that State, in 1911, for the purpose among others of operating a wireless telegraph system. It operated a ship-to-shore and a ship-to-ship radio service on the Pacific coast.

Broadcasting for entertainment purposes had not yet been developed and the radio apparatus, devices, and component parts required in the construction of receiving and transmitting sets were sold to the small number of concerns engaged in the radio communication field, the United States Government, amateurs in radio telegraphy, and experimenters in the radio art. There were a number of concerns engaged in the manufacture and sale of such apparatus, devices, and parts, the principal ones being the Marconi Co. of America, De Forest Radio Telephone & Telegraph Co., Wire-

less Specialty Apparatus Co., a subsidiary of the United Fruit Co., and Federal Telegraph Co. None of these was able to manufacture the modern vacuum tube. The Marconi Co., under its Fleming patent No. 803684, was manufacturing a vacuum tube which was used principally as a detector in radio receiving sets. This tube performed more efficiently than the so-called crystal detector which was used for the same purposes. The crystal was the device used in the receiving sets on board ships and by radio amateurs and was only efficient for short distance communication. Crystals and crystal-receiving sets were manufactured by a few concerns, but principally by the Wireless Specialty Apparatus Co., which controlled the patents thereon. The Wireless Specialty Apparatus Co. is a corporation organized under the laws of the State of New York. The controlling stock interest was obtained by the United Fruit Co., and the Wireless Co., thereafter, in addition to selling radio devices to the Government and amateurs, manufactured under its patents and those owned by the United Fruit Co. a large amount of the radio apparatus required by the fruit company for its wireless systems.

The De Forest Radio Telephone & Telegraph Co. is a corporation organized under the laws of the State of Delaware. It owned a number of patents on radio devices, among which were the important Audion Patents No. 841386, issued January 15, 1907, No. 841387, issued January 15, 1907, and No. 879532, issued February 18, 1908. These patents cover vacuum tubes and under them the De Forest Co. for a time manufactured tubes but was restrained by the United States court in a suit brought by the Marconi Co. of America in which it claimed that the Audion patents infringed its Fleming detector tube Patent No. 803864 (236 Fed. 942). Later the De Forest Co. assigned its patents to the American Telephone & Telegraph Co., retaining a personal nontransferable right in said patents to itself, to manufacture and sell. It confined its business to the manufacture and sale of various component parts used by amateurs and experimenters in assembling radio sets. The Federal Telegraph Co. manufactured the Poulsen arc under certain patent rights, and sold them to the United States Government and to shipowners.

None of the companies who later became associated with the Radio Corporation, except the Wireless Specialty Apparatus Co., was engaged in the manufacture and sale of radio apparatus to the general public. The Westinghouse Electric & Manufacturing Co., though it had done considerable research work in the field of radio, had not yet developed any invention under which it was able to manufacture and sell radio apparatus or devices. The Western Electric Co., which is the manufacturing and sales company for the American Telephone & Telegraph Co., owned or was licensed under various patents covering inventions useful both in radio and in wire telephony. Under these patents it manufactured and sold apparatus principally to the parent company, to the United States Government, and to a very limited extent to amateurs. The General Electric Co., although it had done considerable development work in the radio field and owned some useful inventions, was not engaged in the manufacture and sale of radio devices and parts to the general public. It did, however, manufacture and sell electrical

apparatus which was adaptable for radio purposes and which was also useful for other general electrical purposes.

Section 4. Progress during war period.

There were, prior to the entrance of the United States into the World War, a number of inventions covered by patents, which could have been utilized in the manufacture of a large portion of the modern radio apparatus, and also numerous inventions covering various systems which could have been employed in rendering a more efficient transoceanic radio communication service. These patents were, however, controlled by opposing interests who refused to license one another. During the World War the necessity for efficient radio apparatus and devices for naval and military purposes became of increasing importance. As a result of Government appeal, the concerns mentioned in the preceding section, together with a large number of other manufacturers, disregarding patent rights, engaged in the manufacture of radio apparatus and devices for the Government, upon the Government's guarantee to protect them against all infringement suits. As a result during this period, vacuum tubes which were the most essential devices required, were manufactured by the Westinghouse Electric & Manufacturing Co., General Electric Co., Western Electric Co., the Marconi Co. of America, De Forest Radio Telephone & Telegraph Co., Moorhead Laboratories, Audio Tron Manufacturing Co., and Elman B. Myers.

The Marconi Co. of America from the time of its inception until its high-power stations were taken over by the Government had never been able to give a reliable trans-Atlantic radio service. The inability of that company to give a reliable service was caused by faulty apparatus at both ends—that is, at the transmitting station and at the receiving station. It had equipped its high-power stations on the Atlantic coast with the spark type of transmitting apparatus, which furnished damp or noncontinuous waves. This equipment did not generate sufficient power to transmit radio messages continuously and with any degree of reliability across the Atlantic Ocean. Due to the patent situation, it could not employ a high order of amplification, such as is obtained with the three electrode vacuum-tube amplifiers, and since it did not employ continuous wave generators it could not use the highly efficient receiving system known as the heterodyne. Although the Marconi Co. controlled the two electrode vacuum tubes embodied in the Fleming patent, the device of real efficiency known as the three-electrode vacuum tube was covered by the De Forest patents controlled by the American Telephone & Telegraph Co. For this purpose a machine of much greater power was required and the efforts of a great many of the engineers were directed to inventing a machine capable of producing a sufficient amount of power whereby the distance could be bridged.

The General Electric Co., through its engineers, had for a period of years been endeavoring to build a machine capable of supplying the necessary amount of energy. In 1915 Doctor Alexanderson, an engineer in the employ of that company, succeeded in perfecting such a machine, now known as the Alexanderson alternator. The value of this machine was recognized by the British Marconi Co., which in that year sent Mr. Marconi and Mr. Stedman, its agent and counsel,

respectively, to the United States with a view of making arrangements with the General Electric Co. whereby the Marconi companies could secure the exclusive rights in this machine. A tentative arrangement was made whereby the Marconi companies were to purchase a number of these machines. Before the arrangements were concluded Mr. Marconi returned to Italy, having been called to service by his Government, and negotiations were suspended with the understanding that nothing would be done by either party which would interfere with the execution of a definite contract as soon as business returned to normalcy.

In 1917 the understanding between the companies was canceled and the General Electric Co. negotiated with the American Marconi Co. for the installation of a 50-kilowatt machine at its New Brunswick high-power station. Such a machine was installed at the expense of the General Electric Co. for the purpose of demonstrating the Alexanderson machine and also various other devices in connection therewith. This machine was in operation when the New Brunswick station was taken over by the Navy Department. As a result of the success obtained with this machine the Navy Department suggested to the American Marconi Co. that it install a 200-kilowatt machine, which was then being completed by the General Electric Co. This the Marconi Co. refused to do, and the General Electric Co. installed the larger machine at the New Brunswick station at its own expense. In addition, it made radical changes in the aerial and remodeled the entire system theretofore used by the Marconi Co. The system installed at the New Brunswick station carried the bulk of the radio traffic between this country and Europe from June, 1918, to March 1, 1920, when it was returned to the owner. It was the first high-power station on the Atlantic coast which transmitted radio messages continuously and reliably.

On or about March, 1919, the British Marconi Co. again sent its representatives to the United States to negotiate with the General Electric Co. for the exclusive right of the Alexanderson machine and its accessories. They offered to buy a number of machines with accessories and devices beginning with 14 for the American Marconi Co. and 10 for the British Marconi Co., at $127,000 each. The General Electric Co. was unwilling to sell the rights to the machine outright and insisted upon a royalty for the rights. The negotiations continued and were practically concluded when on April 5, 1919, officers of the General Electric Co. were visited by Rear Admiral Wm. H. G. Bullard, Director of Communications of the Navy, and Commander S. C. Hooper, of the Bureau of Engineering of the Navy Department.

At the conference which took place, Admiral Bullard stated in substance that the New Brunswick station, equipped with an Alexanderson alternator and its accessories, had been demonstrated to be capable of rendering reliable transoceanic radio service; that it was without doubt the best system in existence, and that if the General Electric Co. should sell these devices to the Marconi interests the result would be to make it possible for foreign interests to maintain a monopoly of world-wide communication for an indefinite future period. He asked the officers of the company, as patriotic American citizens, not to make it impossible to establish

an American radio communication company, powerful enough to meet competition of foreign radio interests, by allowing the rights to the Alexanderson machine and its accessories to be controlled by foreign countries.

The officers of the General Electric Co. called Admiral Bullard's attention to the fact that its business was to develop electrical apparatus and to sell to its regular trade, and that the only customers for the devices in question were the Marconi companies. They explained to Admiral Bullard the status of the pending negotiations and pointed out that if these negotiations were terminated the company would have no other outlet whereby it could realize on the investment and developments which the company had made. A discussion was had as to the formation of a new radio company which would have the support of the General Electric Co., and which would therefore be in a position to make the inventions of apparatus available for American communication.

It was pointed out that the most important radio company was the Marconi Co. of America, and that by a patent license from the British Marconi Co. its operations were limited to the United States. It was also shown that the British company owned considerable stock in the American company, and that through such influence radio communication to and from the United States would be largely dominated by the British company. Following these conferences with Admiral Bullard and Commander Hooper, the General Electric Co. ceased negotiations with the British Marconi Co., and proceeded to work out with the officials of the Navy Department a proposed contract under which a new company controlled wholly by American citizens might be formed.

A proposed contract was worked out with the Navy Department which never became effective. The proposed contract contained a stipulation providing that the new company should be so constituted that control thereof should always remain in the hands of American citizens. Secretary Daniels, at the time of the negotiations, was in Europe and the execution of it was delayed until his return. On May 23, 1919, Secretary Daniels requested the officers of the General Electric Co. to meet him in Washington and discuss the contract. The Secretary stated (1) that he was in favor of Government ownership of radio; (2) he doubted his power to execute such a contract because at best it would be an exercise of a war power to project a peace program, which he did not desire to do except with the consent of Congress; (3) that if Congress did not approve of the program of Government ownership of radio, and did authorize the Navy to deal with the matter, a contract such as had been worked out would be acceptable. Congress not having authorized the Secretary of the Navy to deal with the matter, the proposed contract was never executed, and the General Electric Co. proceeded to make arrangements with a view of forming a new company which would take over its inventions.

Certain officials of the War Department were not in accord with the officials of the Navy Department, who desired to officially sanction such a company. Maj. Gen. George L. Squier is authority for the statement that he did not believe the War Department would have taken the same stand in the matter. He also pointed out the uselessness of the Radio Corporation as a selling agent for radio

apparatus when the General Electric and Westinghouse companies already had efficient sales organizations.

The first step taken by the General Electric Co. in anticipation of the formation of the new radio company was to negotiate for the purchase of the block of stock owned by the British Marconi Co. in the American Marconi Co. After due notice to the Secretary of the Navy of its intention, the General Electric Co. undertook negotiations with the American interests in the American Marconi Co. An agreement was made, contingent on the General Electric Co. being able to purchase the British interests, whereby the new radio company was to acquire the property, patents, good will, and business of the American Marconi Co. and to pay therefor, with its preferred stock at par, to the extent of the value of the tangible property actually turned over, and pay for the patents, good will and business with the common stock of no par value. The General Electric Co. also agreed to contribute something over $3,000,000 to the new enterprise, for which it was to take preferred stock of the new company at par, and the General Electric Co. would turn in its patents and those developed during the next 25 years in the radio field, for common stock of no par value.

There was in existence at this time a machine for generating the current required in the transmission of electro magnetic waves, called the Poulsen arc. The patents to this machine were owned by the Federal Telegraph Co. of California. During the war the Navy Department secured the rights to the arc patents to keep them from being purchased by the British Marconi Co. at a time when the development of the Alexanderson alternator was not complete. Commander Loftin, of the Bureau of Engineering, has stated that the Poulsen arc was practically as efficient as the Alexanderson alternator, and that the purpose of getting the General Electric Co. to refuse to part with its rights in the Alexanderson machine to the British interests was to prevent the British company from securing a machine which would enable it to compete with the arc and to cause an American radio company to be formed financially able to compete with the long-established radio business of the British Marconi Co.

On October 6, 1914, letters patent were issued to Edwin H. Armstrong for a wireless receiving system now generally known as the feed-back. This invention was considered an important step in rendering receiving sets more efficient. Licenses were obtained from him by 20 concerns, a number of which proceeded to manufacture receiving sets involving this invention. (For form of license agreement see Appendix, Exhibit Y.) The following concerns obtained such licenses:

Marconi Co. of America (only for use in one or two stations owned by this company); International Radio Telegraph Co.; A. H. Grebe & Co. (Inc.); Chicago Radio Laboratory; Clapp-Eastham Co.; Cutting & Washington (Inc.); Adams-Morgan Co.; Precision Equipment Co.; Jones Radio Co.; Mignon Manufacturing & Export Co.; Tri-City Electric Manufacturing Co.; Klitzen Radio Manufacturing Co.; The Radio Shop; Ord Radio Laboratories; Pennsylvania Wireless Manufacturing Co.; C. D. Tuska Co.; Radio Craft Co.; The Colin B. Kennedy Co.; Eastern Radio Co.; Chelsea Radio Co.

The sets involving the feed-back system work most efficiently when used conjointly with the modern vacuum tube. So long as these tubes were being manufactured in violation, as is claimed, of patent rights, these licensees were able to sell their sets. But at the close of the war a majority of the concerns who had been engaged in the manufacture of radio apparatus, notwithstanding they were infringing on patent rights, stopped manufacturing tubes. Broadcasting had not yet been developed as a commercial proposition and the radio industry was still confined to the manufacture and sale of the component parts required and used in assembling radio sets, and the sets manufactured by the Armstrong licensees which were sold principally to amateurs and experimenters.

During this period a number of ships of the United States merchant marine were supplied by the Navy Department with radio apparatus, and it was necessary to have some companies who would supply these ships with radio service. As a result, a number of companies came into existence. The more important of these companies were the Ship Owners Radio Service Co., the Independent Wireless Telegraph Co., and the International Radio Telegraph Co., all of which operated on the Atlantic coast, and the Kilbourne & Clark Manufacturing Co., which operated such a service on the Pacific coast.

Section 5. Formation of the Radio Corporation of America.

On October 17, 1919, the General Electric Co. caused to be organized under the laws of the State of Delaware the company now known as the Radio Corporation of America, with a capital of 5,000,000 shares of preferred stock at the par value of $5 a share, and 5,000,000 shares of common stock without nominal or par value. The nature of the business or objects or purposes proposed to be transacted, promoted, or carried out, as set forth in the certificate of incorporation, are:

(a) To send and receive signals, messages and communications;

(b) To create, install and operate a system of communication which may be international;

(c) To improve and prosecute the art and business of electric communication.

(d) To radiate, receive and utilize electro-magnetic waves;

(e) To create, manufacture, purchase or otherwise acquire; to hold, own, mortgage, pledge, sell or otherwise dispose of; to invest, trade and deal in goods and merchandise, interests, rights, patent rights, patents, copyrights and other real and personal property of every description in any of the States, districts, Territories or colonies of the United States, and in any and all foreign countries, in accordance with the law thereof;

(f) To acquire the goodwill, franchise, rights, patents, patent rights, copyrights and property, and to take over all or any part of the assets and/or all liabilities of any person, firm, association or corporation, and to pay for the same in cash, property, shares or obligations of the Corporation;

(g) To borrow money by means of obligations issued or through commercial instruments and, in the manner permitted by law, and to secure the payment of any such obligations by mortgage or pledge or agreement as to all or any part of the property, real or personal, of the Corporation, and to provide that any such obligations shall be convertible into or exchangeable for stock of the Corporation upon such terms permitted by law as the Board of Directors shall determine;

(h) To subscribe to, acquire and to hold, own and dispose of securities and obligations of any other corporation, and to issue in exchange therefor the stock or obligations of the Corporation;

To guarantee the payment of dividends upon any shares of the capital stock of, or the performance of any contract by, any other corporation or associa-

tion in which the Corporation shall have an interest, and to endorse or otherwise guarantee the payment of the principal or interest of any obligations of any such other corporation or association;

(i) To have one or more offices, and to carry on its operations, and transact and conduct its business in the State of Delaware, other States, the District of Columbia, the Territories and colonies of the United States, and in foreign countries, and have one or more offices out of the State of Delaware; and, without restriction or limit as to amount to purchase or otherwise acquire, hold, own, lease, mortgage, sell, convey, or otherwise dispose of, real and personal property of every class and description out of the State of Delaware and in any of the States (including the State of Delaware), district, Territories and colonies of the United States, and in any and all foreign countries, subject always to the laws of such State, district, Territory, colony or foreign country;

(j) To make and carry out contracts of every kind for every lawful purpose without limit as to amount with any person, firm, association or corporation;

(k) To carry on all or any of its operations or business without restrictions or limit as to amount, but the powers herein stated shall not include power to construct, maintain or operate railroads, railways, telegraph or telephone lines except outside the State of Delaware.

The provision suggested by Admiral Bullard for retaining control of the Radio Corporation of America in the hands of American citizens was embodied in the fundamental laws of the Radio Corporation in the following terms:

No person shall be eligible for election as a director or officer of the corporation who is not at the time of such election a citizen of the United States. The corporation may by contract or otherwise permit such participation in the administration of its affairs by the Government of the United States as the board of directors deem advisable.

The above provision in the fundamental laws of the corporation was carried out in the by-laws by the adoption of Article IX, which is as follows:

The corporation may, if the board so decide, issue share certificates representing not more than 20 per cent of the total shares of the corporation at the time outstanding (including such issue) in special form which may be owned or held by and the shares represented by which may be voted by foreigners without restriction. These certificates will be a special series known as "foreign share certificates," and each such certificate shall bear the words "foreign share certificate" upon its face. The board may, under such restrictions as it may from time to time adopt, provide for the interchange of "foreign share certificates" and other share certificates, but the aggregate issue of "foreign share certificates" at any time outstanding shall not exceed the percentage above provided. Holders of "foreign share certificates" shall have in all respects the same corporate status and corporate rights as holders of other share certificates. The voting rights represented by share certificates (other than foreign share certificates) shall be transferable only to loyal citizens of the United States and/or corporations formed under the laws of the United States or formed under the laws of one of the States of the United States free from foreign control or domination and not in any foreign interest, and each such certificate shall bear a legend to that effect upon its face.

At any special or annual meeting of shareholders of the corporation any director or the Secretary of the Navy of the United States may by notice in writing filed at the meeting challenge the right of any named shareholder (except foreign share certificate holders) to vote on the ground that the ownership of the shares held by such shareholder is not then in citizens of the United States or in a corporation formed under the laws of the United States or formed under the laws of some one of the States of the United States. In the event that said shares the vote of which is thus challenged, together with other shares challenged at the same meeting and for the same cause, together with the total amount of shares represented by foreign share certificates then issued and outstanding, amount in the aggregate to more than 20 per cent of the total shares of the corporation at the time outstanding, the

meeting shall proceed to record the votes of the other shareholders not challenged and (provisionally) to record the votes of the challenged shares. If it then appear that the result of the voting would not be changed or altered by the receipt of all the challenged votes, then such challenge shall be disregarded. If the contrary appear, the meeting shall not proceed further, but shall adjourn for a period fixed by the chairman. The board of directors shall thereafter meet and promptly investigate the challenges by such method and in so far as they deem expedient, with or without taking evidence and with or without according an opportunity for cross-examination, but according to the person or persons who represented the challenged shares at such shareholders' meeting an opportunity to make a statement in regard to the challenge, and to the Secretary of the Navy of the United States or his agent (but only if he as such agent be present at such meeting) an opportunity to make a statement in regard to the challenge. At the adjourned date of such meeting the board of directors shall report their opinion. If they then report that the majority of those directors present taking part in their deliberation as to the challenge or challenges are of opinion that such challenges or any of them were well founded, such challenged votes as to which their opinion in favor of the challenge applies shall be rejected. Otherwise the challenges shall be deemed ineffective and the votes received. No director shall be personally liable to any shareholder for any action taken by him in the course of such investigation or because of the rejection of any challenged vote or the failure to support any challenge.

If at any shareholders' meeting the Secretary of the Navy of the United States in his official capacity shall challenge the vote of any shareholder (whether or not he be a citizen of the United States and whether or not it be a corporation formed under the laws of the United States or formed under the laws of one of the States of the United States) on the ground that such shareholder holds or votes such shares (other than shares represented by foreign share certificates) wholly or partly in the interest of any foreigner or any foreign nation, such challenge shall be acted on and decided by the board in the same manner as herein provided for other challenges, and the board may decline to receive the vote of shares so challenged.

There were originally only 10 shares of stock which were issued to three dummy stockholders, who immediately after the issuance thereof transferred the same to the General Electric Co. After the first meeting of the stockholders, which took place shortly after the organization of the corporation, the number of shares of common stock was increased to 7,500,000 shares. In 1922 there was outstanding on the books of the corporation 5,734,000 shares of common stock and 3,955,974 shares of preferred stock distributed as follows:

Name.	Common.	Preferred.
General Electric Co	1,876,000	620,800
Westinghouse Electric & Manufacturing Co	1,000,000	1,000,000
American Telephone & Telegraph Co		400,000
United Fruit Co	160,000	200,000

The balance of stock issued, 2,698,194 shares common and 1,735,174 preferred, is held mostly by a group of the former stockholders of the Marconi Co. of America, not more than 20 per cent of whom are aliens.

Representation on the board of directors was had by the above-mentioned principal stockholders as follows: Representing the General Electric Co. are Owen D. Young, Gordon Abbott, Albert G. Davis, and Edward Rice, all officers of the General Electric Co. The Westinghouse Electric & Manufacturing Co. were represented by Guy E. Tripp and Edwin M. Herr; the American Telephone &

Telegraph Co., by Walter J. Gifford and Frederick A. Stevenson; the United Fruit Co., by George F. Davis; and the International Radio Telegraph Co. by Arthur E. Brown.

The 400,000 shares of preferred stock above noted as being owned by the American Telephone & Telegraph Co., is a portion of the original amount, purchased by it from the Radio Corporation in August, 1920. On that date it purchased [redacted] shares of common and 500,000 shares of preferred stock and payment therefor $2,500,000 7 per cent debentures of the Bell Telephone & Telegraph Co. Between February [redacted] and January 18, 1923, it disposed of the above-mentioned [redacted] June 2, 1922, W. J. Gifford and Frederick A. Stevenson, [redacted] the American Telephone and Telegraph Co. on the board of directors of the said Radio Corporation, resigned. The reason for the sale of this stock and the resignation of the directors, as given by N. T. Guernsey, vice president and general counsel of the American Telephone & Telegraph Co., was that "brokers were advertising this stock ownership to induce the public to invest in the stock, which tended to create a moral obligation on this company's part which it did not wish to assume."

The present directors are:

Owen D. Young, chairman.
Gordon Abbott.
Arthur E. Brown.
Albert G. Davis.
George S. Davis.
Harry P. Davis.
John W. Griggs.
James G. Harbord.
Edward W. Hardin.
Edwin M. Herr.
Edward J. Nally.
Edwin W. Rice, jr.
James R. Sheffield.
Guy E. Tripp.

Its officers are:

James G. Harbord, president.
Edward J. Nally, managing director of international relations.
David Sarnoff, vice president and general manager.
William Brown, vice president and general attorney.
John W. Elwood, secretary.
George S. DeSousa, treasurer.
Charles J. Ross, comptroller.
Lewis MacConnach, assistant secretary.
Marion H. Payne, assistant treasurer.

On November 20, 1919, the Radio Corporation entered into an agreement with the Marconi Wireless Co. of America whereby, in consideration of the issuance by the Radio Corporation to the Marconi Co. of America of 2,000,000 shares of preferred stock of the Radio Corporation in payment for the tangible assets of the Marconi Co. and the issuance by the Radio Corporation of 2,000,000 shares of its common stock to the Marconi Co. in consideration for the patents and good will of the Marconi Co., the Marconi Co. transferred to the Radio Corporation all its tangible physical assets, among which were included all the high-power stations on the Atlantic and Pacific coasts, and including all the stock of the Wireless Press (Inc.), a New York corporation, Marconi Cable Telegraph Co., a New York corporation, Marconi Cable Telegraph Co. of New Jersey, Marconi Cable Telegraph Co. of Massachusetts, Marconi Cable Telegraph Co., an Illinois corporation, and three-eighths of the stock of the Pan American Wireless Telegraph & Telephone Co., a Delaware corporation. On the same date it entered into a contract with the General Electric Co. whereby in addition to securing rights under the patents owned or controlled by the General Electric

Co., the General Electric Co. agreed to manufacture exclusively for the Radio Corporation and the Radio Corporation agreed to purchase from the General Electric Co. exclusively all radio apparatus and devices required by it. As a result of the above agreements the Radio Corporation obtained control of practically every privately owned high-power station in the United States, together with a number of important radio patents.

The balance sheet for the Radio Corporation of America, as of December 31, 1922, is as follows:

ASSETS.

Plant and equipment—Comprising high-power stations in operation with the necessary equipment, together with ship stations and sundry machinery, tools, and furniture			$12,711,348.15
Patents, patent rights, contracts, and good will			46,735,232.60
Stocks of subsidiary and associated companies			1,173,507.72
Deferred charges			1,028,906.14
Installation work for foreign customers			639,705.95
Current assets:			
Cash at banks and on hand		$946,888.82	
Accounts and notes receivable		2,445,925.85	
Inventories—			
Merchandise	$3,909,401.09		
Ship, shore and high-power apparatus	1,131,811.85		
		5,041,212.94	
Investments at cost (market value Dec. 31, 1922, $242,924)		252,880.00	
Total current assets			8,686,907.61
			40,975,608.17

LIABILITIES AND CAPITAL.

Capital stock:			
3,955,974 shares 7 per cent preferred, $5 par value		$19,779,870.00	
5,734,000 shares common (no par value)		13,660,163.56	
Total capital stock			$33,440,033.56
Current liabilities			2,688,941.53
Advance collections from foreign customers			895,600.49
Deferred liability (balance payment Tuckerton station)			390,000.00
Reserves:			
For amortization of patents after writing off the patents expired		$2,045,375.84	
For depreciation and obsolescence of plant		1,347,705.27	
Other reserves		167,951.48	
			3,561,032.59
			40,975,608.17

Contingent liability, $37,800.

Section 6. Formation of The International Radio Telegraph Co.

In the preceding section the manner in which the General Electric Co. prepared to enter the radio field in the manufacture of apparatus and in the conduct of a radio communication business is set forth. That company and the Westinghouse Electric & Manufacturing Co. have always been regarded as competitors in the sale of general electrical apparatus. While the General Electric Co. was intrenching itself in the radio field, the Westinghouse Electric & Manufactur-

ing Co. was also making arrangements to place itself upon a footing which would enable it to compete with its rival. Prior to the war it had done considerable development work in the radio art. As it proceeded with the developments it found that the various patents controlled by the International Radio Telegraph Co. were of importance in the art, and it considered that the ownership of rights in these patents would prove of value in the prospective development, and, in addition, serve to place the Westinghouse Co. in a strong strategic position as regards its chief competitor, the General Electric Co., and especially since it had knowledge that the General Electric Co. was endeavoring to purchase these patents.

Accordingly, on May 22, 1920, the Westinghouse Co. entered into a contract with the International Radio Telegraph Co. and its stockholders (see Appendix, Exhibit L), which provided for the formation of a new company to be known as The International Radio Telegraph Co., to take over the patents in question, among which were the Fessenden heterodyne patents and certain other assets of the International Co. Subsequently, it entered into a contract with The International Radio Telegraph Co. (see Appendix, Exhibit N) similar to that entered into between the Radio Corporation and the General Electric Co. (see Appendix, Exhibit C), whereby the Westinghouse Co. obtained the rights to manufacture, use, and sell apparatus covered by these patents for all purposes, except that it was licensed thereunder to sell apparatus for public radio communication purposes only to The International Radio Telegraph Co. The Westinghouse Co., through its control of The International Radio Telegraph Co., contemplated exploiting the rights of radio communication under these patents. On August 5, 1920, The International Radio Telegraph Co. entered into an agreement with the United States Government whereby it secured nonexclusive licenses under all radio patents owned by the Government, a list of which patents is shown in the Appendix as Exhibit A–8. On October 5, 1920, the Westinghouse Co. purchased the Armstrong and Pupin patents, which it found were very useful in receiving apparatus and the rights to which it believed were absolutely essential in order for it to obtain the benefit of the features covered by many of the patents obtained from the International Radio Telegraph Co.

Up to the time of the formation of The International Radio Telegraph Co., broadcasting for entertainment purposes or, in other words, the use of radio for telephonic purposes, were still in an experimental stage. Late in 1920 the Westinghouse Co. erected a broadcasting station at East Pittsburgh, and although the apparatus which it then had was crude, it was enabled to demonstrate to those interested in the radio industry that if proper transmitting and receiving apparatus could be designed and developed, unhampered by patent restraints, broadcasting would become a great public utility, and in anticipation of the probability of the patent situation being cleared up, proceeded with the development. During the year 1921 it developed four types of sets for receiving purposes, all of which required for their efficient operation the use of vacuum tubes and a few other devices the patents to which were controlled by the Radio Corporation of America, the American Telephone & Telegraph Co., and the General Electric Co. Because of the control of these

patents by the latter companies the Westinghouse Co. was unable to sell its sets to the general public. Subsequently, on June 30, 1921, the Westinghouse Co. caused The International Radio Telegraph Co. to sell its patents and assets to the Radio Corporation of America, and on the same date the Westinghouse Co. entered into an agreement with the Radio Corporation (see Exhibit S–1) wherein it agreed to manufacture radio apparatus exclusively for the Radio Corporation of America.

It appears that before the Radio Corporation executed the cross-licensing agreements discussed in Chapter II it, in all cases, submitted them to the officials of the Navy Department except the cross-licensing agreement entered into between it and the Westinghouse Electric & Manufacturing Co. Some of the officials of the Navy Department had hoped that the Westinghouse Co. through its subsidiary, The International Radio Telegraph Co., would be able to find some way to compete with the Radio Corporation both in the sale of equipment and the conduct of a transoceanic radio communication business.

Section 7. Conflict of patents.

Commanders Hooper and Loftin, and a number of independent manufacturers of radio apparatus, are of the opinion that the development of the radio industry, both in the manufacture of radio apparatus and in the operation of reliable commercial transoceanic systems, was retarded while the numerous broad and fundamental radio patents were owned and controlled by opposing interests. There are, however, conflicting claims with reference to the importance of many of the patents owned by the various companies, and as to the necessity for any one company acquiring rights in all of the vast number of patents pertaining to radio then in existence. While, of course, the officials of the Radio Corporation and its associated companies claimed that practically all of the patents were necessary before it could render the efficient kind of service required by the public, there are others who claim that it could very well have gotten along without a number of patents which it did acquire, and that it acquired those patents for the express purpose of monopolizing the entire industry. Because of the newness of the art and the small number of radio patents which have been adjudicated, no attempt has been made to analyze the vast number of patents which were the subject of cross-licensing agreements between the Radio Corporation and the companies now associated with it, from which it could be determined whether or not the Radio Corporation acquired in addition to essential patents a number that were in fact competitive. An effort was made to obtain expert testimony on this point, and the opinions of the following are of interest: Maj. E. H. Armstrong, the inventor of the Armstrong regenerative circuit or feedback system and one of the most noted inventors in radio, on being asked whether "prior to the crossing of licenses by the owners of various patents, could each owner thereof manufacture a complete radio device which could be sold in competition with similar devices manufactured by the other?" replied that "it was absolutely impossible to manufacture any kind of workable apparatus without using practically all the inventions which were then known."

Maj. E. H. Armstrong is employed in an advisory capacity to the Radio Corporation of America and also owns a number of shares of stock therein.

Commander E. H. Loftin, formerly of the radio division, Bureau of Engineering, now connected with the Judge Advocate's office of the Navy, has made a study of the patents which were the subjects of cross-licensing agreements between the Radio Corporation and its affiliated companies for the purpose of ascertaining their relationship to the radio activities of the Government, this study being so comprehensive that it covered a study for commercial purposes. He was asked the following question:

Q. In the absence of these cross-licensing agreements, could any of the companies, under the patents owned by them, have engaged in the manufacture and sale of radio devices and apparatus in competition with each other, or would any of them be in a position to manufacture and sell radio apparatus and give rights under certain of their patents to enable other concerns to operate communicating systems?

In answer thereto he stated:

No successful transoceanic systems, capable of competing in service to the public with cables. Successful receiving apparatus for radio broadcasting could have been manufactured by the telephone company after the expiration of the Fleming patent; but no one could have built the transmitters to supply the broadcasting without the combination of the patents.

He was also asked:

Can you point out any specific patents which each of the companies owned, under which each could have manufactured similar devices?

In answer thereto he stated:

The very soul of radio, for both the commercial operations of commercial systems and the amateur, is the three-electrode vacuum tube, and no company which can not supply equipment which is designed to be used with this tube can hope to be a success.

It is claimed that the situation was cleared up by the Radio Corporation and the General Electric Co. by the cross-licensing agreements with each other and with the American Telephone & Telegraph Co., Western Electric Co., Wireless Specialty Apparatus Co., United Fruit Co., and Westinghouse Electric & Manufacturing Co., all of which agreements will be discussed in Chapter II of this report.

As bearing on this conflict in the patent situation it is pertinent to set out a number of the chief patents and applications for patents pending at the time, by whom each was owned, their importance, and their relationship to one another. However, it should be understood that it is intended merely to state the claims of some experts in the radio art, without passing on the merits, as to the validity or scope of the patents, their importance, and whether or not the full enjoyment of the specific use of each patent described is dependent on its being used conjointly with other patents.

For a long time damped or noncontinuous waves were used in the radio art, but during the war continuous waves came into general use. The officials of the Navy Department, and others claimed that the most efficient long distance radio systems are those that employ continuous waves. The best type of sets for transmitting and receiving continuous waves employ the modern vacuum tube, a regenerative

system, grid leaks, negative bias grids and some form of heterodyne. For receiving systems used in broadcasting the heterodyne method is not necessary.

Of all the devices mentioned as necessary for use conjointly in the construction of a receiving set, the most essential is the modern vacuum tube, which has been termed by many the "heart" or "soul" of radio. Prior to the year 1914 a number of the improvements which have since made vacuum tubes so essential had not yet been developed. The tubes then known were covered by the Fleming Patent No. 803684, issued November 7, 1905, originally owned by the Marconi Co. of America and the De Forest Patents No. 841386, issued January 15, 1907, No. 841387, issued January 15, 1907, and No. 879532, issued February 18, 1908. The last-mentioned patents were originally owned by the De Forest Radio Telephone & Telegraph Co., which in 1917 assigned them to the American Telephone & Telegraph Co., except for a personal nontransferable right to manufacture and sell reserved by the De Forest Co.

Under its Fleming patent the Marconi Co. could manufacture a two-element tube—that is, an evacuated vessel containing a filament and a plate—these two elements being connected in a circuit with a microphone in such a manner that high frequency waves compressed upon the circuit otherwise inaudible in the telephone receiver would be rendered audible by the rectifying action of the tube. The patent on this tube covered its use for radio purposes only. The three-element tube, which is in use to-day, was partly covered by the De Forest patents. It consists of the two elements employed in the construction of the tube under the Fleming patent, and, in addition thereto, a third electrode, known as a "grid," which is a zigzag or perforated plate, placed in between the filament and plate involved in the Fleming tube. This third element, together with a certain circuit arrangement of wires, enables the device to be used not merely to rectify (detect) electric oscillations, but to relay or repeat them on a magnified scale, so that when employed with the proper instrument, such as a telephone, a considerable increase in detecting power occurs. For a short time the De Forest Radio Telephone & Telegraph Co. manufactured a three-element tube under its patents. The Marconi Co. of America brought suit against the De Forest Radio Telephone & Telegraph Co. in the United States District Court, alleging that the vacuum tube manufactured by the De Forest Co. under its patents infringed on the Fleming tube patent. An injunction was granted restraining the De Forest Co. from manufacturing tubes under its patents (reported in 236 Fed. Rep. 942), the court holding that the Fleming patent dominated the use of a vacuum tube either as a detector, repeater, amplifier, or oscillator. As a result of this decision the De Forest Co. ceased manufacturing vacuum tubes in their improved form and the Marconi Co. was limited to the manufacture of the two-element tube, which was incapable of performing all the functions of the modern vacuum tube.

A tube manufactured under a combination of the Fleming and De Forest patents is still not the modern vacuum tube. The tubes manufactured thereunder did not acquire a special importance at first, because they were unstable, erratic, and could not be operated at voltages above 20–40 volts, had a power output of only one one-

hundredth of a watt, and had a life of only about 100 hours. De Forest had supposed that a certain amount of gas in the tube was essential to its operation. This theory was found to be incorrect and one of the improvements which was of far-reaching importance as affecting all the characteristics of the tube was directed toward obviating the deleterious effects of gas. It was necessary to find a means of creating in the tube as high a vacuum as possible. This was brought about by the invention of Dr. Irving Langmuir, whose application for a patent on pure electron discharge tubes, No. 84242, filed March 14, 1916 (renewal of application filed October 13, 1913), is owned by the General Electric Co. A similar improvement was made by Arnold of the Western Electric Co., who, on November 2, 1915, filed application No. 59210 for a similar patent. Both applications were involved in interferences in the Patent Office. The interference was declared in 1916, and a finding was made by the Patent Office in favor of the Langmuir application, from which finding an appeal was taken by the Western Electric Co. to the board of examiners in chief, which appeal is still pending. It seems therefore that the best known form of vacuum tube could not be manufactured by the Marconi Co. of America unless it had rights in the De Forest patents, and in the patents on pure electron discharge tubes. The American Telephone & Telegraph Co. could not manufacture such tubes for radio purposes unless it acquired rights in the Fleming patent and cleared up the interferences of the Arnold application with the Langmuir application on pure electron discharge tubes, while the General Electric Co. could not manufacture, sell, or use such tubes for radio purposes unless it acquired rights in the Fleming, De Forest, and Arnold inventions.

In addition to the patents already mentioned as necessary in the construction of the modern vacuum tube there are a number of construction or detail patents which are considered important by the industry. Among these are the Langmuir reissue Patent No. 15278, issued January 31, 1923, owned by the General Electric Co., which contains claims for supporting one electrode by another; the Nicholson Patent No. 1307510, owned by the American Telephone & Telegraph Co., which claims a construction in which an arbor supports a pair of grids, a pair of plates, and a filament; the De Forest Patent, No. 1201273, issued October 16, 1916, owned by American Telephone & Telegraph Co., which claimed a plurality of plates and a plurality of grids; and the Babcock Patent, No. 1341006, owned by the American Telephone & Telegraph Co., claimed to cover a central electrode and cylindrical grid and plate.

There are patents covering the character of filament used in vacuum tubes. There are two types of filament now generally used—one known as Wehnelt type and the other tungsten. The American Telephone & Telegraph Co. uses the Wehnelt type, to which it owns the patents. The General Electric Co. owns the Coolidge Patent, No. 1082933, issued December 30, 1913, and the Just & Hanaman Patent, No. 1008502, issued February 27, 1912, both covering tungsten filaments, while the Radio Corporation owned the Fleming Patent, No. 954619, issued April 12, 1910, which covered broad claims to the use of tungsten filament in the use of vacuum tubes. It is claimed that in certain types of tubes only the tungsten filament can be successfully employed.

Practically all the radio apparatus now used in the art involves the use of vacuum tubes. When used in combination with certain circuit arrangements and conjointly with other apparatus, they are made to perform a number of very important functions. For example, in transmitting apparatus, the tubes, by certain circuit arrangements are made to serve as oscillation generators to produce the "carrier wave." They also serve as modulators to impress upon the generated wave, the speech, or other signal characteristics; and as repeaters or amplifiers to impress the modulations of feeble telephone currents upon more powerful current from which these modulations are impressed upon the "carrier wave." They also may be used as rectifiers by which alternating currents such as are commonly supplied for power purposes may be converted into direct currents which are necessary to supply the energy in the plate circuit of the tubes, such as those employed as oscillation generators, amplifiers, and repeaters.

The most important and fundamental circuit arrangement necessary for use in combination with a vacuum tube, in order to make the tube perform certain important functions, is covered by the Armstrong Patent, No. 1113149, issued October 6, 1914, now known as the Armstrong regenerative or feed-back circuit. The validity and scope of this patent has been adjudicated as dominating the vacuum tube oscillator, as well as the regenerative circuit used in most of radio receiving sets of to-day. This patent was controlled by the Westinghouse Electric and Manufacturing Co. subject to the rights of the licensees mentioned on page 17. Other patents covering important circuit arrangements claimed to be essential in connection with vacuum tubes are the Lowenstein Patents, No. 1231764, issued July 3, 1917, and De Forest Patent No. 1377405, issued May 10, 1921, both owned by the American Telephone & Telegraph Co. The Lowenstein patent broadly covers the use of a negative potential in the grid circuit to bias the grid to the point where it most effectively operates, while the De Forest patent covers the "grid leak." The General Electric Co. owned Langmuir Patent No. 1282439, issued October 22, 1918. This patent covers a grid condenser with the grid leak which has the function of making the grid negative to the right degree. It is claimed that this patent controlled the use of grid leaks and was in conflict with De Forest Patent No. 1377405, hereinbefore mentioned.

The ownership of the various patents pertaining to the manufacture of vacuum tubes and the use of various circuits in connection therewith, being in the control of different concerns prevented any one of them from manufacturing or using tubes in their most improved form for radio purposes. The claims as to conflict of patents pertaining to this device can be seen, at a glance, from the following list:

IMPORTANT PATENTS AND METHODS OF APPLYING PATENTED INVENTIONS REQUIRED IN THE CONSTRUCTION AND OPERATION OF VACUUM TUBES.

De Forest Vacuum Tube (American Telephone & Telegraph Co.) overlapping Fleming Vacuum Tube (Radio Corporation).

Arnold High Vacuum (American Telephone & Telegraph Co.), interference with Langmuir High Vacuum (General Electric Co.).

Colpitts Grid Modulator (American Telephone & Telegraph Co.), interference with Alexanderson Application (General Electric Co.).

Hartley Plate Modulator (American Telephone & Telegraph Co.), interference with White Plate Modulator (General Electric Co.).
De Forest Oscillator (American Telephone & Telegraph Co.), interference with Langmuir Oscillator (General Electric Co.) and Armstrong Oscillator (Westinghouse Electric Manufacturing Co.).

The Navy Department considered this situation to be serious as tending to retard the development and growth of the entire radio industry, and on January 5, 1920, A. J. Hepburn, acting chief of the Bureau of Steam Engineering, addressed the following letter to the General Electric Co.:

GENTLEMEN: Referring to numerous recent conferences in connection with the radio patent situation and particularly that phase involving vacuum tubes, the bureau has constantly held the point of view that all interests will be best served through some agreement between the several holders of permanent patents whereby the market can be freely supplied with tubes, and has endeavored to point out with concrete examples for practical consideration.

In this connection, the bureau wishes to invite your attention to the recent tendency of the merchant marine to adopt continuous wave apparatus in their ship installations, the bureau itself having arranged for equipping many vessels of the Shipping Board with such sets. Such installations will create a demand for vacuum tubes in receivers, and this bureau believes it particularly desirable, especially from a point of view of safety at sea, that all ships be able to procure without difficulty vacuum tubes, these being the only satisfactory detectors for receiving continuous waves.

To-day ships are cruising on the high seas with only continuous wave transmitting equipment except for short ranges when interrupted continuous waves are used. Due to the peculiar patent conditions which have prevented the marketing of tubes to the public, such vessels are not able to communicate with greatest efficiency except with the shore and, therefore, in case of distress it inevitably follows that the lives of crews and passengers are imperiled beyond reasonable necessity.

In the past the reasons for desiring some arrangement have been largely because of monetary considerations. Now, the situation has become such that it is a public necessity that such arrangement be made without further delay, and this letter may be considered as an appeal, for the good of the public, for a remedy to the situation.

It is hoped this additional information will have its weight in bringing about a speedy understanding in the patent situation, which the bureau considers so desirable.

A similar letter is being addressed to the American Telephone & Telegraph Co., New York City.

Radio telephony became commercially practicable by the use of the modern vacuum tubes. In connection therewith it was necessary to use the inventions covered by Fessenden Patents Nos. 706747, 727330, and 753863 which were owned by the International Radio Telegraph Company. These patents covered the method and apparatus for radio telephony which involved the generation of continuous waves and modifying or changing the character of such waves without interrupting their continuity.

The Alexanderson alternator, patents to which were owned by the General Electric Co., was the most efficient machine for generating high frequency alternating currents of the kind required in the transmission of continuous waves for transoceanic radio communication purposes. It could not be used for the efficient transmission of speech over long distances, because there was no known practical and efficient means for modulating the high power current which it produced. The vacuum tube solved this difficulty in two ways: (1) By using the tube as an oscillation generator in connection with appropriate circuits it could be used to generate the high frequency current required for radio transmission: (2) through its

use as a modulator with intermediate apparatus the high frequency currents produced by the Alexanderson generator as well as such current produced by the vacuum tube could be modulated so as to permit the transmission of speech, music and similar sounds.

As soon as it became practicable to produce vacuum tubes capable of handling considerable power, the development of radio telephony was very rapid. The same transmitting apparatus developed for radio telephony was useful for continuous wave radio telegraphy, the wave being modulated by means of a telegraph key to transmit dots and dashes, instead of being modulated by a microphone to transmit speech.

The modern radio telephone transmitting or broadcasting station involved, in addition to the vacuum tube oscillator and vacuum tube modulator, special speech input equipment, involving special types of microphone and vacuum tube repeaters or amplifiers, filters, and power equipment for furnishing the electrical energy in the desired form for the respective parts of the system.

The patents and applications for patents covering the inventions and methods required in the construction of transmitting apparatus and their use in connection with various circuits are as follows:

1. Grid modulation is covered by Colpitts's reissue Patent No. 14380, issued October 23, 1917, owned by American Telephone & Telegraph Co., and was in interference with Alexanderson application owned by the General Electric Co. This interference resulted in part of the claims being awarded to Colpitts and part to Alexanderson, so that it was necessary to use both patents in order to practice grid modulation.

2. Plate modulation is covered by Heising Patents Nos. 1137315, 1442146, and 1244147, all owned by the American Telephone & Telegraph Co. The General Electric Co. had an application serial No. 46769, filed August 23, 1915, covering a type of plate modulation called the constant potential method. This patent has not been issued, it being involved in a series of interferences now pending involving the Hartley application, serial No. 237033, filed May 28, 1918, and De Forest application, serial No. 48949, filed September 3, 1919, both owned by the American Telephone & Telegraph Co.

3. The magnetic modulation is covered by Alexanderson Patents No. 1206643 and No. 1320959 owned by General Electric Co. A Fessenden patent owned by the Westinghouse Electric & Manufacturing Co. is claimed to dominate the Alexanderson patents on magnetic modulation.

4. Suppression of carrier waves is covered by De Forest reissue Patent No. 14959, issued October 19, 1920, owned by American Telephone & Telegraph Co. As to suppression of carrier where the carrier is an undamped wave there were three interferences. Interference No. 44079, involving Alexanderson application serial No. 244839, owned by General Electric Co., Carson application serial No. 64524, now Patent No. 1449382, issued March 27, 1923, and Arnold application serial No. 64502 now Patent No. 1449392, issued March 27, 1923, both owned by the American Telephone & Telegraph Co. Interference No. 44080 involves the above applications of Carson and Arnold with application of White serial No. 274288, owned by General Electric Co. Interference No. 44081 involves the applica-

tions of Carson and Arnold. In these interferences Alexanderson was awarded broad claims to the suppression of the carrier where the sustained wave is modulated by a wave of different frequency. Alexanderson did not disclose a signal wave as the modulating wave, and hence was unable to obtain claims specific to this feature. Claims were awarded to Carson somewhat more limited than those awarded to Alexanderson, Carson's claims covering broadly the suppression of an undamped carrier wave component when modulated in accordance with a signal wave. As these Carson claims cover the only practical use to which the general idea may be applied, it is claimed by the patent attorney for the American Telephone & Telegraph Co. that the elimination of the carrier wave can not be practiced without employing both the General Electric and American Telephone & Telegraph Co.'s patents.

5. Vacuum tubes as oscillators are covered by numerous patents. The Marconi Co. of America (Radio Corporation) owns Vreeland Patents No. 829934 and No. 829447. For generating high frequency oscillations a number of applications for patents are pending which are involved in interferences. Langmuir application serial No. 797987, dated October 29, 1913, is owned by General Electric Co.; De Forest application serial No. 825954, dated March 20, 1914, is owned by American Telephone & Telegraph Co., Meisner application serial No. 825188, dated March 16, 1914, owned by American Telephone & Telegraph Co.; and Armstrong application serial No. 807388, dated December 16, 1913, is owned by Westinghouse Electric & Manufacturing Co.

6. The best known practical form of oscillation circuit is covered by Hartley Patent No. 1356763, issued October 26, 1920, owned by American Telephone & Telegraph Co. Armstrong Patent No. 1113149, issued October 6, 1914, owned by Westinghouse Electric & Manufacturing Co., has been construed by the courts to cover the feed-back circuit broadly and under such construction dominates the vacuum tube oscillator. Kendall Patent No. 1446752, issued February 27, 1923, owned by American Telephone & Telegraph Co. contains broad claims to a method of producing high frequency as harmonics of a fundamental frequency by the use of distorting tubes. Alexanderson Patent No. 1174793, issued March 7, 1916, owned by General Electric Co., contains basic claims underlying the broad idea of the Kendall patent. It is claimed that it is difficult to design a system of this type which would not employ both the Kendall and Alexanderson patents.

7. Filters are covered by Campbell Patents Nos. 1227113, and 1227114, issued May 22, 1917, owned by American Telephone & Telegraph Co., which broadly cover band filters for selective purposes. Tuned circuits were covered by Stone Patents No. 767976 and 767984, owned by American Telephone and Telegraph Co., and Marconi Patent No. 763772, owned by the Marconi Co., all of which have expired.

8. Power supply is covered by De Forest Patent No. 1201272, issued October 17, 1916, owned by American Telephone & Telegraph Co. It covers filters in the generator lead supplying the plate current. There are a number of applications for patents pending covering power rectifiers. The matter of heating the filament in the vac-

uum tube by alternating currents is covered by a pending interference between an application for a patent owned by the General Electric Co., and one owned by the American Telephone & Telegraph Co. The Stone Patents No. 967983 and No. 767993, issued October 16, 1904, owned by American Telephone & Telegraph Co., contain broad claims to the use of sustained oscillations for wireless telephony. Fessenden Patents No. 753863, issued March 8, 1904, and No. 793650, issued July 4, 1905, owned by the Westinghouse Electric & Manufacturing Co, contain broad claims to the subject matter covered by the Stone patents, and are claimed to be in conflict.

In radio receiving apparatus the following are some of the important inventions which Commander Loftin and other experts claim were necessary patents, and which were controlled by different concerns:

1. Vacuum tubes as detectors and amplifiers were covered by the Fleming and De Forest patents and Langmuir and Arnold applications on power electron discharge tubes, the control of which was in the Marconi Co. of America, American Telephone & Telegraph Co., and General Electric Co., as hereinbefore described.

2. Crystal detectors, which are employed for short distances, were covered by patents Nos. 904222, 963173, 933263, 1137714, 1225852, and 1257526, all owned by the Wireless Specialty Apparatus Co., a subsidiary of the United Fruit Co. It also owned patent No. 1213250, under which it claimed to dominate the De Forest tube patents for detecting purposes.

3. Simple detecting tube circuits are covered by the Fleming and De Forest tube patents heretofore discussed. The homodyne detecting circuits are covered by the LeBlanc Patent No. 857079, issued June 18, 1907, owned by the Westinghouse Co., and the Kendall Patent No. 1330471, issued February 10, 1920, owned by the American Telephone & Telegraph Co. The heterodyne detecting circuit is covered by Fessenden Patents No. 1050441 and No. 1050728, issued January 14, 1913, owned by Westinghouse Electric & Manufacturing Co. Vreeland patents owned by Radio Corporation covered the most practical forms of heterodyne circuit. A Vreeland application covering this method was owned by the Radio Corporation and was in interference with the Lee & Hogan patent owned by the Westinghouse Co., and which was allowed priority on claims taken from the Lee & Hogan patent.

4. Double method of detection is involved in interference No. 48358, including a Hammond application serial No. 175134, filed June 16, 1907, now owned by Radio Corporation; the Heising application No. 81980, filed March 3, 1916, owned by American Telephone & Telegraph Co., and a Levy application No. 249572, filed August 12, 1918, owned by American Telephone & Telegraph Co. There is also pending an Alexanderson application serial No. 92156, filed April 19, 1916, owned by General Electric Co., which contains disclosures of this feature.

The patents hereinabove described are only a few of the inventions covered by patents useful in the radio art. There are hundreds of such patents, lists of which are in the Appendix to this report shown as Exhibits A–1 to A–8, inclusive. Only a few of such patents have been mentioned in this section which are claimed to be broad and fundamental. A large number of the patents listed in

the Appendix cover details and improvements, which it is claimed the owners of the broad patents had to use before they could manufacture under their patents. Of the vast number of patents useful in radio only a few have been adjudicated in the courts. Those already adjudicated are the Fleming Patent No. 803684, Armstrong Patent No. 1113149; Fessenden Patents No. 1054041 and No. 1030728; Coolidge Patent No. 1080933, and De Forest Patents No. 841387 and No. 879532.

As was heretofore stated, it is not intended that the foregoing statement with reference to the patent situation shall be construed as an attempt to pass on the question of the necessity of combining the patents described or whether or not it was necessary to combine the whole or any part of them. There is, as has been stated, a conflict of opinion especially as to whether or not the Radio Corporation in this general pooling of patents did not acquire a number of competitive patents. The evidence so far obtained concerning the necessity for the pooling of the patents owned or controlled by the United Fruit Co. and the Wireless Specialty Apparatus Co. seems to indicate that those patents were practically of no great benefit to the Radio Corporation and that it could very well have conducted its business most efficiently without entering into cross-licensing agreements with those two companies. The Radio Corporation justifies such cross-licensing agreement on the fact that the Wireless Specialty Apparatus Co. owned a patent which it claimed was in conflict with the Fleming tube patent and that by means of this agreement it rid itself of a lawsuit which the United Fruit Co. had against the Marconi Co. of America and which the Radio Corporation assumed when it took over the assets of the Marconi Co. Most of the experts interviewed concerning the necessity of the Wireless Specialty Apparatus Co. patents indicated that those patents had practically no bearing, or would have practically no bearing, on the activities of the Radio Corporation of America.

Section 8. Present status of industry.

The first two years after the Radio Corporation was formed its operations may be classified as follows: Supplying radio apparatus to ships and maintaining communication service between such ships and between such ships and the shore; a transoceanic radio communication service; and the sale of component parts used by amateurs and experimenters in radio in assembling radio sets. In the early part of 1922 it began the sale of complete radio sets manufactured for it by the Westinghouse Electric & Manufacturing Co. and the General Electric Co.

In the ship-to-ship and ship-to-shore radio business great strides have been made. Whereas it had formerly been necessary before being able to communicate by radio from the shore with a ship to wait until the ship came within a comparatively close distance to the shore, it is now possible to communicate with a ship though it is thousands of miles distant from the shore. In this phase of the radio industry, the Radio Corporation is the dominant factor, although it has competition. An important adjunct of this business is the maintenance of shore stations for communication with such ships. The Radio Corporation has a number of such stations both on the Atlantic and Pacific coasts. The Independent Wireless Telegraph

Co. maintains such stations on the Atlantic coast while the Ship Owners Radio Service Co. maintains no stations whatever. The Federal Telegraph Co. maintains stations on the Pacific coast, as does the Kilbourne & Clark Manufacturing Co., a subsidiary of the Ship Owners Radio Service Co.

Since 1919 the Emergency Fleet Corporation has been under contract with the Radio Corporation of America, Independent Wireless Telegraph Co., and the Ship Owners Radio Service Co. (Inc.), wherein those companies render a ship-to-shore service for the ships operated by the Fleet Corporation. These contracts have been renewed from year to year, the ones entered into in 1923 expiring on December 31 of that year. It is the intention of the Emergency Fleet Corporation to continue such contracts with the three companies above mentioned. On November 10, 1923, the Radio Corporation furnished the radio service on 122 ships of the Emergency Fleet, the Ship Owners Radio Service (Inc.) furnished service on 156 of the Emergency Fleet's ships, and the Independent Wireless Telegraph Co. furnished radio service on 123 ships. The Ship Owners Radio Service Co. (Inc.), not having shore stations of its own, uses the shore stations of the other companies. Radio apparatus on the majority of the ships was supplied by the Navy Department and consists principally of the Poulsen arc type of apparatus.

In this business it is necessary for the companies to supply the ships with vacuum tubes to be used in connection with the apparatus furnished by each company to the ships, and also in the land stations operated by them in connection with their service. The Radio Corporation has a monopoly in the sale and use of such tubes. It has recently brought suit against the Independent Wireless Telegraph Co. claiming that the use of such tubes by it in connection with apparatus on board ships and in land stations controlled by the Independent Wireless Telegraph Co. is an infringement of its patent rights. The tubes used by the Independent Wireless Co. are the same generally sold by the Radio Corporation to the public, but which tubes have affixed to them a notice to the effect that the tube is licensed to be used for amateur and experimental purposes only. Should the Radio Corporation prevail in this suit, all the ship-to-shore service companies now competing with it will be hampered in their business or forced to go out of business. The Tropical Radio Telegraph Co., a subsidiary of the United Fruit Co., also maintains ship-to-shore service in the Caribbean Sea, but this company is affiliated with the Radio Corporation of America.

In the field of transoceanic radio communication the Radio Corporation of America has a virtual monopoly. With the exception of high-power stations controlled by the United States Government, and a station at Miami, Fla., owned by the United Fruit Co., which is affiliated with the Radio Corporation of America, the Radio Corporation is the only one in the United States now engaged in transmitting and receiving radio messages between the United States and foreign countries. Under the various traffic agreements between it and foreign governments and radio companies, which will be discussed in Chap. III, it is doubtful if any company seeking to conduct a similar business in the United States could exist, by virtue of the provisions in the majority of these contracts obligating the foreign companies to transmit all messages intended for the United

States only through the facilities owned by the Radio Corporation of America. (See also p. 52.)

The Radio Corporation now operates six high-power transmitting stations located one each at New Brunswick, N. J., and Marion, Mass., and two each at Tuckerton, N. J., and Rocky Point, Long Island, and one important multiplex receiving station located at Riverhead, Long Island. All of these stations are connected by wire, with a central station located at 64 Broad Street, New York City, from which point the transmitting and receiving apparatus located in the above-mentioned stations are directly controlled. Until very recently all messages desired to be sent by radio to European countries had to be forwarded to the New York office of the Radio Corporation. Under a recent traffic arrangement with the Postal Telegraph Co., a copy of which is shown in the Appendix as Exhibit KK, such messages can be left at any office of the Postal Telegraph Co. for transmission to such countries with which the Radio Corporation has connections.

The Radio Corporation now has direct radio communication between this country and Great Britain, Germany, France, Poland, Italy, and Norway, and very shortly will have connections with Holland and Sweden, and also with Brazil and the Argentine. On the Pacific coast it operates high-power stations at Bolinas, Calif., and Hawaii, from which it transmits radio messages to Japan. It has concessions in China, where it has started the erection of a high-power station which will soon be in direct communication with the California stations of the Radio Corporation.

From its stations on the Atlantic coast the Radio Corporation is handling approximately 30 per cent of the entire volume of cable and radio messages annually sent between the United States and European countries and approximately 50 per cent of the volume of such messages sent between the Pacific coast and the Far East is being handled from its Pacific coast stations.

For a time the rates charged by the Radio Corporation were lower than those charged by the cable companies, but in 1923 the cable companies reduced their rates to the level of those charged by the Radio Corporation.

The following is a comparison of the rates charged for trans-oceanic messages by the cable and radio companies from the time radio communication was inaugurated: In 1914 the Marconi Co. of America opened its first commercial radio circuit in competition with the Pacific Commercial Cable Co. between Hawaii and the United States. The rate charged by the Marconi Co. was 25 cents a word as compared with the rate by cable of 35 cents per word. The Marconi Co. also offered in addition a night and week-end lettergram. Later the cable company reduced its tariff to that of the Marconi Co., although it has never installed a lettergram service. In 1916 radio service was extended to Japan also in competition with the Commercial Pacific Cable Co., which for some years had enjoyed a monopoly. The cable rate at that time between San Francisco and Japan was $1.21 per word, while the rate offered by the Marconi Co. was 80 cents a word with a deferred service at one-half this rate. Some time later the cable company reduced its regular rate to 96 cents per word and the Marconi Co. to 72 cents per word.

On March 1, 1920, the Radio Corporation transmitted the first commercial messages to Great Britain. The cable rates between New York and Great Britain had for more than 30 years remained unchanged at 25 cents per word for ordinary traffic. The rate charged by the Radio Corporation at the opening of this service was 17 cents per word, and on January 1, 1921, increased to 18 cents per word. On April 15, 1923, the radio rate was increased to 20 cents per word, and on April 20, 1923, competitive cable companies reduced their rates to Great Britain to 20 cents per word. On March 1, 1920, a direct service was established with Norway. The cable rate between Norway and the United States had been 35 cents per word, while that established by the Radio Corporation for its service was made 24 cents per word. On August 1, 1920, service was established between the United States and Germany. At the time the cable rate was 36 cents per word the Radio Corporation established its service at the same rate. Later, the cable rate was reduced to 30 cents per word and the radio rate to 25 cents per word. On December 14, 1920, service was established with France, the cable rate for many years had been 25 cents per word, while the radio rate was established at 20 cents per word. The radio rate was increased to 22 cents per word on April 15, 1920, and on April 20, 1923, the cable companies reduced their service to the same rate.

Communication between the United States and Italy was established on August 10, 1923. The cable rate had long been 31 cents per word while the radio rate was established at 26 cents per word. On October 4, 1923, direct service was established with Poland. The cable rate for many years had been more than 30 cents per word while the radio rate was established at 25 cents per word.

The lower rates charged by the Radio Corporation has resulted in a large increase in its traffic. The American Marconi Co. had never operated a commercial transoceanic service across the Atlantic. In the Pacific Ocean territory, however, it transmitted the following number of paid words: 1914, 93,000; 1915, 509,000; 1916, 770,000; 1917, 1,150,000. From 1917 until 1920 operations were suspended upon the stations being taken over by the Government. Operations were resumed by the Radio Corporation, successors to the American Marconi Co., on March 1, 1920, and total number of paid words transmitted in both Atlantic and Pacific Ocean territories being as follows: 1920, 7,000,000; 1921, 18,000,000; 1922, 23,000,000.

The demand for radio apparatus for broadcasting purposes did not develop until the fall of 1921. Prior to that time the only demand for apparatus was from amateurs and experimenters who purchased the various component parts necessary to make a receiving and transmitting set and who in the main assembled these sets themselves. Because it was impossible to secure vacuum tubes the majority of the amateurs used the crystal, and with it could receive messages only at comparatively short distances. To supply the demands of these amateurs there were, as indicated, a number of concerns who were manufacturing the parts and in addition the Armstrong licensees who for a short time prior to the formation of the Radio Corporation manufactured and sold sets complete with the exception of vacuum tubes. The tubes used in these sets were being manufactured by the Moorhead Laboratories and by the Audio Tron Sales Co. under temporary licenses from the owners of the patents. There

are no statistics available which would show the volume of business done in radio supplies prior to the formation of the Radio Corporation, but since the formation thereof the available statistics indicate that an enormous amount of business is now being done in the radio industry. The Radio Dealer, a publication devoted to the radio industry, gives the total amount paid by the public for radio apparatus for the year 1922 as $100,000,000. This, of course, is exclusive of the amount purchased by the United States Government. This amount includes revenue derived from sale of patented apparatus such as sets, tubes, and parts, and unpatented articles such as batteries, of which the last item alone amounted to approximately $10,000,000. Of the total amount purchased by the public the Radio Corporation of America sold approximately 20 per cent, the balance being distributed among hundreds of other manufacturers. According to the annual report of the directors of the Radio Corporation, its gross sales of radio apparatus, devices, and appliances, including vacuum tubes, for the year 1922, amounted to $11,286,489.41. These figures are its sales at wholesale price and adding 40 per cent (discount allowed to its distributors) to that amount, shows that its sales for that year amounted to approximately $20,000,000 at retail, or 20 per cent of the total amount paid by the public for radio apparatus.

A summary of operations of the Radio Corporation of America for the year ending December 31, 1922, with comparative figures for the year ending December 31, 1921, is as follows:

Item.	Year ended— Dec. 31, 1922.	Dec. 31, 1921.
Gross income from operations:		
Gross sales	$11,286,489.41	$1,468,919.95
From transoceanic communication	2,914,283.11	2,138,625.86
From marine service	630,084.24	553,298.71
	14,830,856.76	4,160,844.52
Deduct:		
General operating and administration expenses, depreciation, and cost of sales	12,126,464.71	3,762,231.48
	2,704,392.05	398,613.04
Other income	270,187.72	28,186.55
Net income for year	2,974,579.77	426,799.59
Applied as follows:		
Reserve for amortization of patents	2,480,576.25	426,799.59
Reserve for Federal income tax	270,000.00	
Proportion of organization expense written off	224,003.52	
	2,974,579.77	426,799.59

The General Electric Co. and the Westinghouse Electric & Manufacturing Co. manufacture all the complete sets involving vacuum tubes that are sold by the Radio Corporation of America. The Department of Commerce has estimated that there are now close to 2,000,000 sets in the hands of the public being utilized for the reception of broadcasted entertainment. Of these sets the Radio Corporation has sold only a small portion. In addition to the Radio Corporation there are to-day over 200 concerns engaged in the manufacture and sale of complete sets, minus tubes, and about 5,000 concerns manufacturing

various devices and parts useful in radio. Replies received in answer to a questionnaire sent to a number of manufacturers of radio apparatus indicate that their business has increased in the first half of 1923 anywhere from 25 to 100 per cent over the business done for the same period in 1922.

In the sale of vacuum tubes the Radio Corporation of America had an absolute monopoly until about November 7, 1922, on which date the Fleming patent, which it owned, expired. It, of course, always had and still has competition in the sale of such tubes from those manufacturing them without patent right. But on the expiration of the Fleming patent the De Forest Radio Telephone & Telegraph Co., which had retained a right to manufacture such tubes under its De Forest Audion patents, commenced the manufacture of tubes similar to those of the Radio Corporation, and since then has been selling them to the general public in competition with the Radio Corporation. The De Forest Audion patents expire in 1924 and 1925 and apparently upon the expiration thereof any concern having the facilities will be in a position to manufacture the modern vacuum tube.

Although there is at present competition in the sale of receiving sets, complete except for tubes, particularly the competition of the Armstrong licensees, it is uncertain how long it will continue. The Radio Corporation claims that the manufacture and sale of a receiving set to be used conjointly with the vacuum tubes manufactured by it is an infringement on its tube patents. It has brought suit against A. H. Grebe & Co., one of the Armstrong licensees, to restrain it from selling such sets (see Appendix, Exhibit UU). Should the Radio Corporation prevail in this suit, it is claimed that competition in the sale of complete radio sets for broadcasting purposes will be eliminated until, at least, such time as the tube patents expire. The Western Electric Co. is practically the only concern which has the right under the patent situation and is manufacturing and selling transmitting apparatus for commercial broadcasting purposes. As showing the increase in the broadcasting field, it is worthy of note that whereas in 1921 there were practically only two broadcasting stations which sent out any form of entertainment, there are to-day 562 such stations located all over the United States. The Radio Corporation, Westinghouse Electric & Manufacturing Co., General Electric Co., and American Telephone & Telegraph Co. maintain the largest of such stations, operating them at an annual expenditure of thousands of dollars. A few of the smaller manufacturers of radio apparatus also operate such stations. They receive no revenue therefrom except such as may result from creating a public demand for receiving sets. A large majority of the other broadcasting stations are operated by private concerns such as department stores and newspapers for the benefit of such advertising as might accrue therefrom.

CHAPTER II.

CONTROL OF PATENTS.

Section 1. Introduction.

The main purpose of this chapter is to show the ownership of the patents and the manner in which the Radio Corporation has acquired control of practically all radio patents through the various agreements to which it is a party. Some of the important patents controlled by the large companies will be mentioned, although no attempt will be made to discuss the claims for these patents or their relation to each other. The restrictions as to the manufacture and sale of products under these patents, and the provisions of the contracts in relation thereto, will also be set forth.

In Exhibit A of the Appendix to this report will be found a list of practically all the United States patents covering radio apparatus, including those owned by the Government. The statement is arranged by companies, and in addition to the number of the patent, the date of issuance, the name of the inventor, and the title of the patent are given. There is also included a list of the applications made by some of these companies for patents on radio devices now pending in the United States Patent Office. This statement shows that the Radio Corporation of America now has title to 277 different patents bearing on radio apparatus, etc.; and in addition has 65 applications for patents pending. It also has acquired the patent rights by license agreements to the patents owned or controlled by the General Electric Co., American Telephone & Telegraph Co., Westinghouse Electric & Manufacturing Co., Wireless Specialty Apparatus Co. (a subsidiary of the United Fruit Co.), and the Radio Engineering Co. of New York (the Hammond patents). The number of patents owned or controlled by these various companies are as follows: General Electric Co., patents, 114; applications pending, 110; American Telephone & Telegraph Co., patents, 337; Westinghouse Electric & Manufacturing Co., patents, 146; applications pending, 16; Wireless Specialty Apparatus Co., patents, 68; applications pending, 4; Radio Engineering Co. of New York, patents, 144; the United States Government, patents, 127 (including those licensed from the Federal Company); and the Federal Telegraph Company, 19 patents.

Section 2. Radio Corporation of America.

A list of the patents owned by the Radio Corporation is shown in Exhibit A–1 of the Appendix, and does not include the patents licensed from the other companies. The latter, which are covered by the various license and cross-license agreements with the Radio Corporation, are listed under the company retaining title to the patents. This order is maintained so that it may be possible to follow the transfer of the rights under these various agreements.

Most of the patents now owned by the Radio Corporation were secured through the purchase of the assets of the Marconi Wireless Telegraph Co. of America. The various agreements leading up to

and including this transfer of properties will be discussed in t following section, which deals with the General Electric Co. T patents owned by the Radio Corporation itself include the i portant Fleming patents on electron receiving tubes, the Vreela patents on tube oscillators, the tungsten electron filament pate and the Weagant patents relative to static elimination.

The Radio Corporation of America was caused to be organiz by the General Electric Co. on October 17, 1919. It will be not from examining the various agreements set out in the Appendix, a which are discussed in this chapter, that they were all consummat within the two years following, with the exception of the agreeme whereby the rights to the Hammond patents were acquired. T majority of the agreements are to run until 1945. With certa minor limitations, the Radio Corporation under these agreemen secured an exclusive divisible right to sell and use the radio devic covered by the patents involved or by any patents which the oth companies may acquire during the life of the agreement. It in tur grants to the other companies the right to make devices under a of its patents, applications for patents, etc., which it then own or controlled or which it should acquire during the term of th agreement. Provision is also made in these agreements for mutu interchange of information obtained relative to radio devices an that in the event the Radio Corporation is taken over by any s perior authority, except in time of war or public danger, the righ transferred and given thereunder shall revert to the company ownin the patent.

The provision in the agreement between the Radio Corporatio and the General Electric Co. with respect to the patent rights trans ferred in the event that the Radio Corporation is taken over by th Government is as follows:

> Inasmuch as the General Company is not willing to turn over its patent patent rights and licenses for any definite sum of money, but is willing t transfer such patents, patent rights and licenses only for a considerable i terest in the profits to be derived from the use by the Radio Corporation such patents, patent rights and licenses, it is therefore understood and agre that in the event of the taking over of the Radio Corporation by any superi authority all right, title and interest of the Radio Corporation in any paten patent right or license herein granted or agreed to be granted by the Genera Company to the Radio Corporation shall cease and shall be reassigned and sha revert to the General Company as of the date of such taking over except t the extent provided below. If instead of taking over the Radio Corporatio the Government takes over its radio stations in any field and/or territory, ex cept in and for time of war or public danger, the same result shall follow s far as concerns that field and/or territory. But this action shall in no wa affect the rights of Marconi's Wireless Telegraph Company, Limited, or o Shielton, Limited, as set forth in the "Radio Corporation and British Marcon Company Principal Agreement"; such rights shall be reserved from any suc reassignment by the Radio Corporation for the benefit of Marconi's Wireles Telegraph Company, Limited.

Section 3. The General Electric Co.

The patents owned by the General Electric Co. are listed in th Appendix. (See Exhibit A-2.) This company, being a large man ufacturer of electrical machinery and apparatus, much of which ca also be used for radio purposes, early became interested in the de velopment of the art. Some of the important patents owned by thi concern are the Langmuir grid leak patents, the Alexanderson alter

nator patents, the broad Coolidge patents covering tungsten filament, and the several multiple antenna patents.

It appears that in 1919 the General Electric Co., in anticipation of the formation of the Radio Corporation of America, negotiated with the Marconi's Wireless Telegraph Co. (Ltd.), a corporation of Great Britain, for the purpose of purchasing the stock owned by it in the American Marconi Co. Negotiations were also had with the Thomson-Houston Co., a British corporation, with reference to the purchase of certain patent rights under which the Marconi Wireless Telegraph Co. of America was licensed. Furthermore, negotiations were entered into by the General Electric Co. with the American Marconi Co. for the purchase of all its tangible assets and patent rights.

On October 17, 1919, the negotiations between the General Electric Co. and the British Marconi Co. (Ltd.), British Thomson-Houston Co., and American Marconi Co. had reached such a stage that the General Electric Co. addressed a letter to the Radio Corporation, reciting that in anticipation of the formation of the Radio Corporation it had formulated plans by which the Radio Corporation could obtain an advantageous agreement with the Marconi's Wireless Telegraph Co. (Ltd.) for the purchase of their interests in the American Marconi Co. and an agreement for the conduct of an international radio business, also an agreement with the Marconi Wireless Co. of America for the purchase of certain of its assets; that in order to bring about these agreements it had expended certain sums of money to an amount in excess of $2,000,000 in the purchase of the holdings of the stock of the British Marconi Co. in the American Marconi Co., and proposed to the Radio Corporation that in consideration for the procuring of said agreements and the purchase of the aforementioned stock and the payment of the sum of $385,000 in cash to the Radio Corporation that the Radio Corporation issue to the General Electric Co. 135,174 shares of its preferred stock and 2,000,000 shares of its common stock.

This proposal was accepted by the board of directors of the Radio Corporation on October 22, 1919, as a result of which, on October 22, 1919, the General Electric Co. and the Marconi Wireless Telegraph Co. of America executed a written agreement, set forth in the Appendix (see Exhibit B–1), wherein the Marconi Co. of America agreed to urge upon its stockholders to consent and approve the execution by the Marconi Co. of a certain agreement termed the Marconi-Radio agreement (see Exhibit B–2), and as soon as said consent was obtained the Marconi Co. would formally execute and deliver said agreement simultaneously with the execution and delivery thereof by the Radio Corporation. The consideration for this agreement was stated as being (*a*) that the General Electric Co. agrees to cause the Radio Corporation to execute and deliver said agreement as soon as the Marconi Co. secures consent or approval of its stockholders and (*b*) the mutual releases as to damages for infringing upon patents owned by each.

On November 20, 1919, the agreement between the Radio Corporation of America and Marconi Wireless Telegraph Co. of America (see Appendix, Exhibit B–2) was executed and delivered. This contract set forth that in consideration of the issuance by the Radio

Corporation to the Marconi Co. of 2,000,000 shares of preferred stock of the Radio Corporation, in payment for the tangible assets of the Marconi Co., and the issuance by the Radio Corporation of 2,000,000 shares of its common stock to the Marconi Co. in consideration for the patents and good will of the Marconi Co., the Marconi Co. transferred to the Radio Corporation (1) all its tangible physical assets; (2) all its patents, patent rights, licenses, and good will, with the understanding that in the event of the taking over of the Radio Corporation by any superior authority, all right, title, and interest in the Radio Corporation in any patent, patent right, or license herein granted to the Marconi Co. by the Radio Corporation shall cease and shall be reassigned and shall revert to the Marconi Co. as of the date of such taking; (3) that the Marconi Co. should continue its organization only until such time as was necessary to conclude certain proceedings which the Marconi Co. had instituted for infringement of its patent rights, and that when requested by the Radio Corporation it would take the proper steps to have its corporate entity dissolved. (The Marconi Co. was accordingly dissolved on August 2, 1920.) The Radio Corporation was to advance to the Marconi Co. such sums as are considered reasonable by counsel to prosecute these claims as well as for the defense of any patent suits.

On November 20, 1919, the General Electric Co. also entered into an agreement with the Radio Corporation (see Exhibit C). Under this agreement the General Electric Co. granted to the Radio Corporation of America an exclusive divisible license to use and sell, but not to make, except where and if the General Co. is not in a position to supply the desired device for radio purposes, under all its patents, applications for patents, inventions, rights, or licenses under or in connection with patents which the General Co. then owned or controlled or which it might thereafter acquire during the term of the agreement, which was to terminate in 1945. The Radio Corporation granted to the General Electric Co. the exclusive divisible right to make and sell devices to the Radio Corporation only, as well as the exclusive divisible right to make, use, and sell devices other than radio devices, under all its patents and applications for patents, inventions, right or licenses under or in connection with patents which the Radio Corporation then owned or controlled, or which it should thereafter acquire during the term of the agreement, and that the General Electric Co. could use for its own communication or for other purposes or convenience or to save expense, but not for profit, devices under all said patents. The General Co. agreed that it would not sell or dispose of any radio devices whatever covered by said patents for use in the United States, except to the United States Government and to the Radio Corporation, and the Radio Corporation agreed to purchase from the General Electric Co. only all radio devices covered by said patents which the General Co. was from time to time in a position to supply with reasonable business promptness for use in, or which was used in, the business and operation of the Radio Corporation. There was also a provision that the Radio Corporation should not lease, sell, or dispose of devices bought from the General Electric Co. where the General Electric Co. would not be free under its patent rights to sell such devices, and the General Electric Co. agreed that where a device manufactured under said

patents is adapted both for radio and other purposes that it could sell such devices only for the purpose not connected with the radio art, it being understood that the rights of the Radio Corporation were limited to radio purposes and the rights of the General Co. in the sale of said devices were limited to other than radio purposes. The Radio Corporation was bound in the sale of its devices to use such precaution by contract of sale, restricted notices of license, as were necessary to prevent its customers from acquiring the licenses to use said devices for purposes to which the Radio Corporation had no right to grant such licenses, and the General Co. agreed to observe similar precaution in selling apparatus and devices especially adapted to radio work but capable for other uses. Provision was also made for the cross-licensing under future letters patent and for the mutual interchange of information concerning patents, inventions, and the patent situation in the radio field.

This agreement of November 20, 1919, also included the inventions, patents, and rights of the International General Electric Co.; the Australian General Electric Co., China General Edison Co. (Inc.), Compania General Electric de Brazil, South African General Electric Co. (Ltd.), Cia General Electric Sudamericana (Inc.), and the Mexican General Electric Co.

As previously stated, many of the devices under the patents owned by the General Electric Co. covered articles for other than radio purposes. This fact is recognized by the following provision in the agreement:

1. Radio purposes is defined as the transmission or reception of communications—telegraphic, telephonic, or other—by what are known as electromagnetic waves, but not by wire.

2. Radio devices are defined as comprising:

(*a*) Devices useful only in radio purposes.

(*b*) Devices especially adapted to radio purposes but capable of other uses such, for example, as the Alexanderson alternator with accessories or the pliotron, except where the same are sold licensed only for uses other than radio uses, in which case the same are not to be regarded as radio devices hereunder.

3. The expression "devices" shall include apparatus, devices, systems, connections, and methods.

After the agreement discussed above was consummated, certain of the rights acquired were extended to other companies. An agreement of this character, which will be mentioned here, is that between the Radio Corporation and the Marconi's Wireless Telegraph Co. (Ltd.), dated November 21, 1919. This provides for (*a*) an interchange of licenses in all the patents owned and controlled by both companies pertaining to radio and (*b*) the maintenance of special research facilities for the diligent prosecution of the research for the improvement of the art and for the free exchange of information and future patents relating to radio. The agreement terminates in 1945 and is set forth in full in the Appendix (see Exhibit DD). Certain rights involved in the Radio-General Electric main agreement were also extended to the American Telephone & Telegraph Co. (see Appendix, Exhibit E), the Wireless Specialty Apparatus Co. (see Appendix, Exhibit I), and the Westinghouse Electric & Manufacturing Co. (see Appendix, Exhibit S–1). The agreements transferring such rights are also discussed in this chapter (see pp. 44, 46, 47).

Section 4. The American Telephone & Telegraph Co.

A list of the patents owned by the American Telephone & Telegraph Co. and its subsidiary, the Western Electric Co., is given in the Appendix (see Exhibit A–3). The parent company in the maintenance and development of its telephonic system and the Western Electric Co. in its manufacture of telephonic apparatus owned and were licensed under various radio patents. This fact should be borne in mind in studying the contracts entered into by these companies.

In Chapter I (see p. 13) the importance of the De Forest patents, which covered some of the important features of the vacuum tube now in use and which were owned by the American Telephone & Telegraph Co. has been mentioned. It was also claimed that there was an interference between the Langmuir patents of the General Electric Co., the rights to which the Radio Corporation had acquired under the agreement of November 20, 1919, and the Arnold patents of the Western Electric Co., a subsidiary of the American Telephone & Telegraph Co. Apparently, with the view of eliminating these differences, the General Electric Co. on July 1, 1920, entered into an agreement with the American Telephone & Telegraph Co. (see Appendix, Exhibit D), which was extended to include the Radio Corporation and the Western Electric Co. on the same date (see Appendix, Exhibit E). With respect to the objects of these agreements the following language may be noted:

> Whereas each party is in possession of information, patents, and inventions applicable to, and has research organizations engaged in investigations bearing upon not only its own business but also the business of the other party; and
>
> Whereas various patents or applications for patents of the parties are involved in interference with each other in the United States Patent Office; and
>
> Whereas the restrictions upon each party imposed by the patent rights of the other and the uncertainties arising out of interferences have tended to, and if permitted to continue will hamper and delay progress in the development and production of wire and wireless telephone and telegraph apparatus and systems; and
>
> Whereas the effective and prompt development of the arts in question can be secured only by the free and frank cooperation and exchange of information between the parties, which can not well take place if the improvements and knowledge resulting from one party's cooperation with the other party may without its consent be made available in its field to the use of others.

This agreement was to extend for a period of 10 years and gave to each other the use of patents and patent rights owned by all parties. The scope of licenses granted was to use methods and processes and to make, use, lease, sell, or otherwise dispose of, apparatus, machines, devices, appliances, and systems embodying the inventions of the several patents in the field in which the licenses are granted. It was provided, however, that no rights were granted to either party to manufacture or to have manufactured under any patents licensed, apparatus of the character at the time manufactured by the other party, except in factories owned or operated by one of the other parties thereto or by their controlled companies. Each reserved the right to manufacture for and sell to the United States Government and for its own use. The telephone company retained under its own patents and obtained by virtue of the agreement, rights in patents of the General Electric Co. and the Radio Corporation of America, relative to the manufacture, use and sale of apparatus and devices

in so far as the same are adapted for use in commercial wire telephony. It secured the exclusive right to manufacture and sell broadcasting transmitting apparatus and a nonexclusive right to manufacture and sell receiving apparatus for direct use only in connection with such apparatus. The General Electric Co. retained for itself, under its own patents, and secured from the telephone company under the agreement, the exclusive right to make, use, lease, and sell wireless telephonic apparatus and systems for communication by and between airplanes, ships, and other automotive vehicles except railways, and for all amateur purposes, with the exception as noted above. It also obtained nonexclusive licenses to establish and maintain stations for transmitting or broadcasting news, music, and entertainment. All parties agreed to use reasonable endeavors to settle without litigation interferences now pending or which might arise involving inventions within the scope of the agreement. Also, that neither party shall acquire from the other rights to or under United States patents or inventions, or rights to use secret processes applicable to the fields of the other party of such limited character that the other party does not receive licenses thereunder of the scope and within the respective fields, unless the party purposing to acquire such rights shall first have given the other party an opportunity to be represented in the negotiations and thereby to obtain rights for its field. Provision was also made as to the exchange of information with reference to devices, apparatus, systems or methods applicable to the use of the other party. With respect to litigation the following clause is noted:

> Each party shall have the exclusive right to bring suits for infringement in the fields in which its licenses are herein expressed as exclusive (and the General Co. may bring such suits for infringement in the field of transoceanic wire and wireless telephony), joining in any such suit the patent owner or the party which has acquired from the patent owner the right to sue thereunder.
>
> Neither party shall bring suit for infringement of patents against the other party, or against the distributors and jobbing houses owned by or affiliated with either party, because of sales by such party, or by its (or its controlled companies) distributors or jobbing houses, of devices made, in the United States of America, by others than the parties hereto, it being agreed that the remedy in case of any such infringement shall be only by suit against the manufacturer of those devices.

On the same date of the above agreement the parties, including the Radio Corporation of America and the Western Electric Co., agreed that if the Government should take over either company, the agreement should terminate. This agreement will also be found in the Appendix (see Exhibit F).

In section 6 of this chapter is mentioned the patents of the Westinghouse Electric & Manufacturing Co. including the important Armstrong and Pupin patents, and the agreement by which the Radio Corporation and the General Electric Co. were given certain rights therein. The rights to these patents in the telephone field were extended to the American Telephone & Telegraph Co. by agreement under date of June 30, 1921, the telephone company having agreed to pay one-third of the purchase price of the Armstrong and Pupin patents. The agreement is set forth in full in the Appendix (see Exhibit T).

Section 5. The United Fruit Co.

The patents owned by the United Fruit Co. and its subsidiary, the Wireless Specialty Apparatus Co., are listed in the Appendix (see Exhibit A–4). The most important of these were the Pickard patents to crystal sets and a patent to a loop antenna, which were owned by the Wireless Specialty Apparatus Co.

As pointed out in Chapter I (see p. 33), it was claimed by the Radio Corporation that the Pickard patents covered broad basic principles employed in the apparatus used by the Radio Corporation. This claim was eliminated by an agreement between the Radio Corporation of America, the General Electric Co., and the Wireless Specialty Apparatus Co., dated March 7, 1921. The agreement is set forth in the Appendix (see Exhibit H) and expires on January 1, 1945. Under this agreement the Wireless Co. granted to the other companies under all its patents having to do with communication by wireless or by wire, or with apparatus or devices for use in connection therewith, which it then owned or might acquire, an assignable license to make, use, and sell, which license is exclusive, except (*a*) the Wireless Co. reserved the right to make, use, and sell under its own patents, and (*b*) the right to grant licenses to the United Fruit Co. or its subsidiaries. The Wireless Co., by virtue of this agreement, acquired from the other companies rights under their patents having to do with wireless communication or with apparatus or devices for use in connection therewith which they then owned or might acquire, a nonexclusive license to manufacture and sell apparatus of the following types, viz, wavemeters, radio compasses, goniometers, slip sets, and receiving sets, transmitting sets up to 5-kilowatt power input and parts and accessories therefor, such license, however, being limited to include only manufacture and sale to the United Fruit Co. and its subsidiaries and the United States Government.

On the same date the Radio Corporation granted to the United Fruit Co. a license to use the inventions covered by any and all its patents having to do with wireless communication. This was limited, however, to include only uses of the patents for certain purposes. The agreement also included certain restrictions with respect to wireless communication, which will be mentioned in Chapter III (see p. 56). Provision was made for the exchange of information with reference to inventions pertaining to wireless communication, or apparatus or devices therefor, and an exchange of licenses under patents thereafter obtained. It was also provided that the Radio Corporation would give a patent guarantee to the United Fruit Co. with all apparatus sold to it or its subsidiaries.

The granting by the Radio Corporation of licenses under all patents to the United Fruit Co. and the Wireless Specialty Co., as mentioned above, was agreed to by the American Telephone & Telegraph Co. and the Western Electric Co. on March 9, 1921 (see Appendix, Exhibit K).

Section 6. The Westinghouse Electric & Manufacturing Co.

The patents owned by the Westinghouse Electric & Manufacturing Co. are listed in the Appendix (see Exhibit A–5). This list includes the important heterodyne patents of Fessenden purchased from The

International Radio Telegraph Co. and the Armstrong and Pupin patents, among which was the Armstrong regenerative circuit. The importance of these patents and their relation to patents already controlled by the Radio Corporation has been mentioned in Chapter I (see pp. 17, 28). The Westinghouse Co. had prior to the war done considerable development work in the radio field and was engaged in the manufacture of certain radio apparatus. Its acquisition of additional patents in this connection is therefore of interest.

On May 22, 1920, the Westinghouse Co. entered into a contract with the International Radio Telegraph Co. and its stockholders, which provided for the formation of a new company, The International Radio Telegraph Co., to take over certain patents, which included the Fessenden patents, and other assets of the old International Co. This agreement is set forth in the Appendix (see Exhibit L). Stock in the new concern to the amount of $2,500,000 was subscribed for by the Westinghouse Co., as is shown by the agreement dated June 21, 1920 (see Appendix, Exhibit M). There was also a license agreement between the two companies under the patents owned by the International Co. (see Appendix, Exhibit N). Under this agreement the Westinghouse Co. was given the right to manufacture, use, and sell apparatus covered by these patents for all purposes except that apparatus for public commercial radio communication purposes could be sold only to The International Radio Telegraph Co.

On October 5, 1920, the Westinghouse Co. secured an option to purchase from Edwin H. Armstrong and Michael I. Pupin 4 patents and 16 applications for patents relating to radio. This agreement is set forth in the Appendix (see Exhibit Q). The patents involved are stated in the agreement and were taken over subject to the licenses granted certain parties, commonly referred to as the Armstrong licensees, to manufacture radio apparatus.

In 1921 the Radio Corporation began negotiations for certain rights under the patents controlled by the Westinghouse Co. Under the agreement of the Westinghouse Co. with the International Radio Telegraph Co. of May 22, 1920, the Westinghouse Co. could only manufacture for the International Co., while under the agreement of November 20, 1919, the General Electric Co. could only manufacture for the Radio Corporation, and it, in turn, could only purchase from the General Electric Co. It was necessary therefore to modify the agreement of May 22, 1920, before the Westinghouse Co. could act in the matter, which was done by agreement on June 30, 1921 (see Appendix, Exhibit S–1). On the following day The International Radio Telegraph Co. transferred to the Radio Corporation its patent rights and licenses under patents, together with certain of its assets including the right to receive and retain for its own use the sum of $2,200,000 from the Westinghouse Co. It was specifically provided that the assignment did not include patents, patent rights or licenses in Canada, United Kingdom of Great Britain and Ireland, and Japan, or any of the stock of the company. The agreement is set forth in the Appendix (see Exhibit P). Under separate agreement entered into on June 30, 1921, the American Telephone & Telegraph Co. agreed to pay one-third and the Radio Corporation two-thirds of the purchase price of the Armstrong and Pupin patents (see Appendix, Exhibit T). The Westinghouse Co., the Radio Cor-

poration, and the General Electric Co. then entered into an agreement which provided for a mutual exchange of licenses under all patents pertaining to radio then owned or which might thereafter be acquired. This agreement was dated June 30, 1921, and terminates January 1, 1945 (see Appendix, Exhibit S–1). Provision was also made for the mutual interchange of information with respect to the subject of radio. Probably the most important provision was that bearing on the percentage of goods to be purchased by the Radio Corporation from the General Electric and Westinghouse companies. This provision, in part, is as follows:

It was the purpose and intent of the General Company in entering into Agreement A to retain the exclusive manufacturing rights under its patents for radio purposes, and to acquire similar exclusive manufacturing rights under the patents of the Radio Corporation. This purpose was accomplished by granting to the Radio Corporation (except in case of failure of the General Company to supply) no manufacturing rights whatever, but merely the exclusive rights for sale and use, as specified, of devices purchased of the General Company, and by acquiring from the Radio Corporation the exclusive manufacturing rights, specified under its patents.

The Westinghouse Company, in its dealings with the International Company, evidenced by Agreement D, was actuated by a similar motive and acted in a similar manner.

The present situation is such that the Radio Corporation thus finds itself obliged to purchase of the General Company everything which is made under the patents of the General Company or of the Radio Corporation, and of the Westinghouse Company everything which is made under the patents of the Westinghouse Company and of the International Company. It develops that if the Radio Corporation is to give the efficient service which it desires to give, important devices which the Radio Corporation desires to purchase must be manufactured under the patents of the two groups.

In the situation thus created the manufacturing companies have agreed that the licenses are extended as hereinafter specified to enable the Westinghouse Company to manufacture for the Radio Corporation under patents of the General Company and of the Radio Corporation, and to enable the General Company to manufacture for the Radio Corporation under the patents of the Westinghouse Company and of the International Company, to such an extent that the Radio Corporation in the manner and to the extent herein provided may purchase from time to time from the General Company sixty per cent and from the Westinghouse Company forty per cent of all radio devices covered by patents, rights under which are granted or agreed to be granted in either Agreement A or Agreement D (provided, however, that the right of the Radio Corporation to use or dispose of said devices arises from the grants of Agreement A and/or D) which either the General Company or the Westinghouse Company is from time to time in a position to supply with reasonable business promptness for use in, or which are or shall be used in, the business and operation of the Radio Corporation and its future licensees and customers and its existing licensees. To this end the Radio Corporation agrees that of the orders which it shall place with the two manufacturing companies during the portion of the calendar year 1921 following the date of execution of this agreement and in each calendar year thereafter for the life of said agreements A and D, it will in placing orders with the manufacturing companies for such patented apparatus as it is licensed to purchase only from the Manufacturing Companies order sixty per cent in selling price to the Radio Corporation in each said period of the General Company, and forty per cent in such selling price in each said period of the Westinghouse Company. Where an order is canceled by agreement of the parties concerned, the amount of the cancellation is to be allowed for by proper adjustment of the orders in the period in which the cancellation becomes effective. Any unavoidable excess of orders placed with one company in any such period is to be adjusted by giving to the other company more orders in the next period, except in so far as such excess is due to the failure of the other manufacturing company to supply devices of good quality and with reasonable business promptness.

As a result of the Radio-General Electric-Westinghouse agreement, there was also an agreement between the American Telephone & Telegraph Co., the Western Electric Co., and the Westinghouse Co., which provided for an exchange of licenses. This gave to the telephone company and its subsidiary, the Western Electric Co., rights under the Armstrong and Pupin patents. The contract is to expire July 1, 1930, and is set forth in the Appendix (see Exhibit T).

The option which the Westinghouse Co. held with respect to the purchase of the Armstrong and Pupin patents was exercised August 24, 1922. The agreements covering this phase of the matter are listed in the Appendix as Exhibits V, W, and AA, and include title to the Turner and Bolitho patents.

Section 7. The Radio Engineering Co. of New York.

The most recent transaction involving the transfer of patent rights relating to radio devices is the license of the so-called Hammond patents to the Radio Corporation of America. A list of the patents involved is included in the Appendix (see Exhibit A–6). By this agreement, which is dated March 14, 1923, the Radio Corporation was granted an assignable and divisible license to make, use, sell, and lease under certain of the patents owned by the Radio Engineering Co. At the request of the Radio Corporation, such request not to be made for two years from date of contract, the Radio Engineering Co. is to assign the entire right, title, and interest to these patents. With respect to the other patents owned by the Radio Engineering Co., title was to be retained pending negotiations with the United States Government for a nonexclusive license for governmental purposes only.

The Radio Corporation is specifically given the right to bring suits for infringement of any of its license rights, including the right to recover damages, but may join as parties the Radio Engineering Co. without cost to them.

Section 8. The De Forest Radio, Telephone & Telegraph Co.

Under the list of patents of the American Telephone & Telegraph Co. it will be noted that several De Forest patents are included (see Appendix, Exhibit A–3). Among these were certain important patents relating to the vacuum tube, the importance of which has been mentioned in Chapter I (see p. 13). The De Forest Co. maintains a personal nontransferable right to manufacture and sell under these patents. The company also owns certain other patents covering radio apparatus which are listed in the Appendix as Exhibit A–7.

Section 9. The Armstrong licensees.

In section 6 of this chapter (see p. 47) reference has been made to the purchase of the Armstrong and Pupin patents by the Westinghouse Electric & Manufacturing Co., these being purchased subject to the licenses granted certain parties to manufacture radio apparatus under the patents involved. These patents are listed in the agreement with the Westinghouse Co., which is set forth in the Appendix as Exhibit Q. The concerns, commonly referred to in the trade as the Armstrong licensees, who can manufacture apparatus under these patents are as follows:

Crosley Manufacturing Co., 232 Alfred Street, Cincinnati, Ohio (controls Precision Equipment Co.); Clapp-Eastham Co., 133 Main Street, Cambridge, Mass.; Adams-Morgan Co., 12 Alvine Avenue, Upper Montclair, N. J.; A. H. Grebe & Co., Richmond Hill, N. Y.; Jones Radio Co., Lytton Building, Chicago, Ill.; Chelsea Radio Co., 79 Spruce Street, Chelsea, Mass.; Colin B. Kennedy Co., St. Louis, Mo.; Klitzen Radio Manufacturing Co., Racine, Wis.; Chicago Radio Laboratory (Inc.), Chicago, Ill.; Cutting & Washington Co., New York City; Mignon Manufacturing & Joint Co., Buffalo, N. Y.; The Radio Shop, Altadena, Calif.; Oard Radio Laboratory, Oxnard, Calif.; Pennsylvania Radio Laboratory, Philadelphia, Pa.; Radio-Craft Co. (Inc.), Jersey City, N. J. (controlled by De Forest); C. D. Tuska Co., Hartford, Conn.; Tri-City Electric Manufacturing Co.

The license agreement with the Radio-Craft Co. (Inc.), which is set forth in the Appendix as Exhibit Y, is typical of the agreements with the other 16 concerns. The licensee is granted a nonexclusive, nontransferable license to manufacture and sell apparatus (*a*) to radio amateurs for use in amateur radio stations, and (*b*) to radio experimenters and scientific schools, for use in experimental and scientific school radio stations. These agreements are to remain in force to the end of the term of Letters Patent No. 1113149, which issued October 6, 1914, and any reissue or extension of said letters patent.

Under this agreement, which involves the important Armstrong regenerative circuit patents, these concerns are manufacturing and selling complete receiving sets, with the exception of vacuum tubes. Their right to sell such apparatus for use with tubes made by the Radio Corporation is involved in a proceeding now pending in the courts and which is discussed in Chapter IV (see p. 92). Whether these licensees are to continue as active competitors of the Radio Corporation depends on the result of this proceeding and the suit against the same parties in which is involved their right to sell apparatus for use in conjunction with apparatus made under the Langmuir, Lowenstein, and Mathes patents (see Appendix, Exhibits UU and VV).

Section 10. The United States Government.

In Exhibit A-8 of the Appendix is shown a list of the patents owned by the Government, including those under which it has licenses from the Federal Telegraph Co. of California. During the war the Government purchased all the patents owned by the Federal Co., among which was the patent covering the Poulsen arc. After the close of the war it resold these patents to the Federal Co. and retained for the Government a nontransferable license to manufacture and use.

The majority of the patents listed are now owned by the Federal Telegraph Co. subject to the Government license.

P. 130:

[fol. 3919] EXHIBIT D

License Agreement—General Electric Co. and American Telephone & Telegraph Co.

Agreement made this first day of July, 1920, between the General Electric Company, a New York corporation (herein called the General Company), and the American Telephone & Telegraph Company, a New York corporation, herein called the Telephone Company.

* * * * * * *

P. 133:

2. Wireless telegraphy.—(a) The General Company grants to the Telephone Company nonexclusive licenses in the field of wireless telegraphy for its own communication or for purposes of convenience or to save expense in connection with its commercial operation of wire telegraph and [fol. 3920] wire and wireless telephone systems, but not for profit or for transmission of messages for the public.

* * * * * * *

P. 134:

(c) The General Company grants to the Telephone Company licenses (exclusive, except that the General Company reserves exclusive rights for the uses and to the extent specified in foregoing subdivision b) in the field of trans-oceanic wireless telephony, such licenses being limited, so far as concerns service for the public or for others than the Telephone Company, to rendering such service through only the General Company's systems for trans-oceanic communication. But if and so long as the General Company is not prepared to and does not remain in a position to and does not supply such service, the Telephone Company may establish wireless stations for rendering such service, after giving the General Company reasonable notice and opportunity to do so, and shall have the right to continue to render such service through all such stations established by it except in so far as the General Company shall elect to cooperate in rendering such service, or

any portion thereof, in which event the General Company shall take over those stations, or such of them as it shall elect, at the then cost of reproduction less depreciation. While the transoceanic service is being rendered through the General Company's stations, the advertising and the division of rates shall be as provided in foregoing subdivision b of this section 4.

(d) The Telephone Company grants to the General Company: (1) Exclusive licenses to make, use, lease and sell wireless telephone apparatus and systems for communication by and between airplanes, airships, ships and other automotive devices, except railway vehicles. The General Company is granted non-exclusive licenses to establish transmitting and receiving stations for communication with the foregoing, but is given no right to connect with any public service telephone system. The Telephone Company is licensed, but is under no obligation, to establish or maintain means by which such wireless telephone communication may be had with and through the Telephone Company's telephone system, and the Telephone Company is under no obligation to permit such communication. If, however, the Telephone Company shall establish, maintain or permit such wireless telephone communication through stations of third parties, other than the United States Government, it shall do the same with respect to the General Company's stations on at least as favorable terms, including distribution of tolls, and engineering requirements. In case, at any time, the General Company has established such a station as is referred to in this paragraph, and the Telephone Company shall elect to cooperate or render such wireless service in any substantial part of the same territory, it shall purchase the said station of the General Company at the then cost of reproduction less depreciation.

* * * * * * * *

P. 135:

(e) The General Company grants to the Telephone Company, (1) subject only to subdivisions (a), (b) and (c) and [fol. 3921] paragraph (1) of subdivision (d) of this section, exclusive licenses in the field of wireless telephony to make, use, lease and sell all wireless telephone apparatus connected to or operated as a part of a public service telephone communication system, whether wire or wireless.

(2) Subject to all of the foregoing, exclusive licenses in the field of wireless telephony to make, use and sell for all business, public service and commercial uses of such character as might be served by leased wires, as for example brokers' offices, business houses, manufacturing plant, gas and water companies, mining companies, etc.

* * * * * * *

(b) Subject to the foregoing, the General Company grants to the Telephone Company exclusive licenses in the field of wire telephony on land, and over cables not more than one hundred miles in length, and between the main body of the United States and Cuba; licenses are granted by each party to the other with reference to other transoceanic wire telephony, such licenses being of the character and subject to the limitations and provisions expressed in foregoing subdivisions (b) and (c) of section 4, with reference to transoceanic wireless telephony.

* * * * * * *

P. 139:

EXHIBIT E

Extension Agreement—General Electric Co., American Telephone & Telegraph Co., Radio Corporation of America, and Western Electric Co.

Whereas a license agreement was entered into between the General Electric Company, a New York corporation, herein called the General Company, and the American Telephone and Telegraph Company, a New York corporation, herein called the Telephone Company, dated July 1, 1920, and

Whereas the General Company desires to extend rights thereunder to the Radio Corporation of America, a Delaware corporation (herein called the Radio Company), pursuant to the provisions of an agreement of November 20, 1919, between the General and Radio Companies; and

Whereas the Telephone Company desires to extend rights thereunder to the Western Electric Company, Incorporated, a New York corporation (herein called the Western Company), pursuant to the provisions of an agreement of February 6, 1882, as modified by agreement of April 8, 1908, between the Telephone and Western Companies; and

Whereas the Radio and Western Companies, respectively, desire to obtain such rights, but in accordance with Subdivision (b) of Section 3, Article VI of said agreement of July 1, 1920, such rights may be extended only with the assent of both of the parties to said agreement.
[fol. 3922] Now, it is agreed as follows:

P. 140:

1. The General Company may extend to the Radio Company, and the Telephone Company may extend to the Western Company (pursuant to the above mentioned agreements of November 20, 1919, February 6, 1882, April 8, 1908 or otherwise), any of the said rights reserved and acquired by each, respectively, under this present agreement and under said agreement of July 1, 1920, whether or not expressed in said agreement of July 1, 1920 as personal or nonexclusive or nonassignable, except any right to terminate under the provisions of Article XIV of said agreement.

2. The Western Company hereby grants and agrees to grant to the General Company, under the present and future patents of the Western Company, rights of the same character and scope, and for the same fields and subject to the same limitations and conditions, as the rights granted to the General Company in and by said agreement of July 1, 1920: Provided, however, That all rights herein granted and agreed to be granted are subject to rights which the Western Company hereby reserves for itself and for the Telephone Company and their several successors in business of the same character and scope and for the same fields and subject to the same limitations and conditions as the rights reserved by the Telephone Company in and by said agreement of July 1, 1920. And the Western Company hereby assumes towards the General Company and the Telephone and Western Companies assume toward the Radio Company, to the extent that the General Company, under the provisions of Clause 1 hereof, extends or may hereafter extend its rights to the Radio Company, obligations similar to the obligations assumed by the Telephone Company toward the General Company in and by said agreement of July 1, 1920, except that the Western Company assumes no obligations as to operation of telephone or telegraph systems unless and until it shall engage in the commercial operation of such systems.

3. The Radio Company hereby grants and agrees to grant to the Telephone Company, under the present and future patents of the Radio Company, rights of the same character and scope, and for the same fields and subject to the same limitations and conditions, as the rights granted to the Telephone Company in and by said agreement of July 1, 1920; Provided, however, That all rights herein granted and agreed to be granted are subject to rights, which the Radio Company hereby reserves for itself and for the General Company and their several successors in business, of the same character and scope and for the same fields and subject to the same limitations and conditions as the rights reserved by the General Company in and by said agreement of July 1, 1920. And the Radio Company hereby assumes toward the Telephone Company (and the General and Radio Companies assume toward the Western Company, to the extent that the Telephone Company, under the provisions of Clause 1 hereof extends or may hereafter extend its right to the Western Company) obligations similar to the obligations assumed by the General Company toward the Telephone Company in and by said agreement of July 1, 1920, except that the Radio Company assumes no obligations as to manufacturing or selling articles or devices which it is not from time to time engaged in commercially manufacturing.

4. This agreement shall terminate at the same time that the said agreement of July 1, 1920, terminates.

* * * * * * *

P. 151:

[fol. 3923] EXHIBIT K

Consent to Agreement Between Radio Corporation of America and Wireless Specialty Apparatus Co. by American Telephone & Telegraph.

American Telephone & Telegraph Company

New York, March 9, 1921.

General Electric Company, 120 Broadway, New York, N. Y.

GENTLEMEN: As contemplated in Article VI, Section 3-b, of the license agreement dated July 1, 1920, the American Telephone and Telegraph Company and the Western Elec-

tric Company, Inc., hereby assent to the grant by you and the Radio Corporation of America of sublicenses to the United Fruit Company, the Tropical Radio Telegraph Company, and the Wireless Specialty Apparatus Company under the patent licenses acquired or to be acquired by you under said agreement of July 1, 1920, and also to the grant to steamship companies now or hereafter owned or controlled by said United Fruit Company, of sublicenses to use under the licenses so acquired or to be acquired by you. This assent is conditioned upon the grant, either directly or by mesne grants, to this company and to the Western Electric Company, Inc., by said United Fruit Company, said Tropical Radio Telegraph Company, and said Wireless Specialty Apparatus Company, of licenses (similar in scope to the licenses granted by the General Electric Company in said agreement, except for rights reserved for the Wireless Specialty Apparatus Company to make, use and sell) under all United States patents and rights to or under United States patents now or hereafter during the term of such sublicenses owned or controlled by the said United Fruit Company, said Tropical Radio Telegraph Company, and the said Wireless Specialty Apparatus Company, or either of them, to the extent to which said companies may have the right to grant such licenses.

American Telephone & Telegraph Company. (Sdg.) W. S. Gifford, Vice-President. Western Electric Company (Inc.). (Sdg.) C. G. Du Bois, Pres.

[fol. 3924] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 192

Copies of Certain Contracts Between Southwestern Telegraph and Telephone Co. and American Bell or A. T. & T. and Southwestern T. & T., Resolutions of Directors, Etc.

Portion of Abstract of Record in City of Houston v. Southwestern Bell Telephone Co., 259 U. S. 318

Preliminary Contract Between American Bell Telephone Co. and Southwestern Telegraph and Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 878)

The following is an exact copy of this exhibit:

This agreement made this twenty-seventh day of July 1889 by and between the American Bell Telephone Com-

pany, a corporation created under the laws of the Commonwealth of Massachusetts of the first part, and The Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, of the second part. Witnesseth:

Whereas the second party has certain license contracts issued by said The American Bell Telephone Company (a schedule of which contracts is hereto annexed marked "A") and

Whereas said second party desires to surrender said several license contracts and to have certain other license contracts as hereinafter set forth, and the first party has agreed to accept such surrender and to enter into such other license contracts as hereinafter set forth.

Now, therefore, it is agreed as follows, that is to say:

1. Conditional upon said second party owning and controlling all and singular any plants, properties, franchises and rights of every name and nature built, acquired or used, under or by virtue of or for any use in conducting any business done or to be done under said license contracts so to be surrendered, or any of them, and standing in the name of said second party or any other name, or operated by said second party or by other parties, and all income and revenues therefrom and thereunder, and

Conditional upon said second party forthwith surrendering and giving up to said first party said several license contracts named in schedule A, and all and singular the [fol. 3925] rights of it, said second party, or of other parties in, to and under the same.

2. Said first party agrees that it will accept such surrender and that it will thereupon enter into the following described agreements with said second party, that is to say:

(a) license contract for exchange purposes—Form 109-D, hereto annexed marked "B,"

(b) license contract for extra-territorial connecting lines, Form 113-D, hereto annexed marked "C."

(c) license contract for the supply of telephones for private lines and other purposes, Form 116-C, hereto annexed marked "D."

But said second party shall assume and perform any and all contracts with subscribers made under said license con-

tracts or any or either of them so to be surrendered and existing at the time of such surrender and shall hold all telephones furnished thereunder by said The American Bell Telephone Company (schedules of which said telephones are hereto annexed marked "E"), as the property of said The American Bell Telephone Company and each under the license contract for like purposes as that under which it was originally furnished, so to be made with it said second party and with like effect as if actually furnished thereunder, except that rental and royalty thereon shall begin at the date of such new license contracts.

3. Whereas it has been and is agreed that said first party in consideration of the premises shall be entitled to and have thirty hundredths (30-100) interest in all and singular the property, rights, business and property of said second party, as the same stood on July 1, 1889, to be paid as hereinafter specified, and that such interest shall not be required to contribute to the expense of developing the territory of said second party nor to the payment of liabilities incurred on account thereof before the first day of June 1891.

[fol. 3926] Now, therefore, for the accomplishment of said purpose and in consideration of the premises, the second party shall forthwith upon the execution of said license contracts furnish and pay to said The American Bell Telephone Company thirty hundredths (30-100) of its capital stock as the same shall stand fixed at the date of such payment, all such stock to be lawfully issued, full paid and not subject to any assessment or contribution.

[fol. 3927] 6. Said second party shall not borrow money for extension of its business nor for any other purpose without the consent of said The American Bell Telephone Company.

7. Said second party shall assume and pay any and all taxes, whether municipal, county, state or other, on, or on account of or by reason of the instrument leased or business done under said license contracts to whomsoever assessed, but this stipulation shall not be held to include the tax assessed by the State of Massachusetts on the corporate franchise of said The American Bell Telephone Company.

8. Said second party shall keep books and accounts of its business according to forms furnished by said The

American Bell Telephone Company, which books and accounts shall be open to inspection at all reasonable times by any authorized agent of said company, and shall make reports to it embodying such information as and in such form as it may from time to time desire.

9. Said The American Bell Telephone Company shall have two representatives on the Board of Directors and one representative on the Executive Committee of said second party.

[fol. 3928] Form 109-D

Contract for Exchanges Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 881)

Contract for Exchanges

This agreement, made this Twenty-seventh day of July A. D. 1889, by and between the American Bell Telephone Company, a corporation created under the laws of the State of Massachusetts, Lessor and Licensor, party of the first part, and The Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, Lessee and Licensee, party of the second part, Witnesseth:

(1) Whereas, the Lessor owns the Letters Patent of the United States granted to Alexander Graham Bell, March 7, 1876, and January 30, 1877, numbered 174,465, 186,787 respectively, and owns or has the right to use, and may hereafter own or have the right to use, sundry other inventions, which are or may be embodied in electric speaking telephones, and desires to extend the use of telephones licensed by it in every manner in which the public may wish to use the same, and for that purpose to provide for the construction and use of the apparatus and lines necessary to be used in connection therewith; and whereas the Lessee desires to obtain the use of telephones under lease and [fol. 3929] license from the party of the first part to be used with the lines of telephonic district or exchanges systems established and owned by it in the territory hereinafter described under the provisions hereinafter set forth; now it is agreed as follows:

(2) The rights hereby granted shall be perpetual unless determined as hereinafter provided, and shall extend to all Exchanges established and owned by the Licensee, and wholly within the following described territory, namely: The States of Arkansas and Texas.

(3) For the purpose of this contract on "Exchange," or "a district or exchange system" means a system in which different stations on the same or different circuits, and either within any city or town, or within a radius of fifteen miles of a central office, are connected with such central office or branch offices, for the purpose of placing subscribers or other parties by such circuits in communication with such central or branch offices, or with each other, either directly or through the agents of the system. No office or line of an Exchange can be connected with any point outside of its territory, nor with any telegraph company's office or line, except by lines of the Licensor or parties specially designated by it for this purpose, nor, except in connection with such lines, can the lines of an Exchange be used for performing any part of the work of transmitting messages by telephone to points outside its territory, and no telegraph company, unless specially permitted by the Licensor, can be a subscriber or use the system to collect and deliver messages from and to its customers, nor shall any person use the same telephone in connection with different exchange systems.

(4) The Licensor, at its general office or factory, will deliver to the second party, as needed, electric speaking telephones, made and to be used under its patents, during the existence of the rights hereby granted and as herein set forth and permitted, and all telephones delivered to the [fol. 3930] second party during the continuance hereof shall be deemed to be furnished hereunder, unless otherwise specially designated by the Licensor. They will be of such character and pattern and bear such marks as the Lessor shall from time to time determine, but the second party may choose from among such standard patterns. Each of said telephones shall remain the property of the Licensor, and is hereby leased, and the use of it licensed under said patents and all others under which the Lessor has or may have a right to license, so far as applicable thereto, for the purposes herein declared for the term of one year from the day when rent and royalty begin to accrue on it as pro-

vided in Article 8, but the due payment thereof to the Licensor, and the due performance of the stipulations hereof during said year, by the second party and those using the telephone under it, shall ipso facto operate to renew the lease and license for another year, and so on until the expiration or other determination hereof; the second party is hereby licensed to use said telephones for any purpose, upon circuits exclusively composed of the lines of any such exchange system, and to use them in connection with the trunk lines reserved to the Licensor by Article 9, for the purposes and to the extent therein limited, during the term hereby created, upon condition and so long as the rental therefor shall be duly paid to the Licensor and as the provisions hereof are not violated, but not longer or otherwise; and it may grant said right to its customers by contracts as provided in Article 7.

The Lessor will not license any telephones to be used by others upon an exchange system within said territory while the rights of the second party hereunder exist, except telephone to be used on the lines of Exchanges having their central offices outside said territory by persons within said territory who are or may be subscribers to or customers of such Exchanges; but the second party shall, by general or special exchanges, supply (so far as it is author- [fol. 3931] ized so to do by this contract) all reasonable demands of the public, and shall be diligent to increase the number of telephones used on its exchanges. All rights not hereby specifically granted remain to the Licensor.

(5) The Lessor will license to be used with such telephones the inventions in call-bells, switches, switch-boards, and other apparatus needed for such telephone lines, which it can so license, upon such royalties as it may from time to time establish, not greater than those fixed for others under similar circumstances; but such call-bells, switches, switch-boards and other apparatus shall be used only with telephones licensed by the Lessor, and the second party agrees not to use them otherwise nor to dispose of them to any one except those so licensed, or to the licensed manufacturers of the Lessor. The second party may enjoy any rights of way and similar franchises to maintain said lines which the Lessor can permit it to use, when and so long as, in the judgment of the Lessor, it shall not interfere with the Lessor's enjoyment thereof, and shall pay whatever

may be due to third persons, if anything, growing out of or in connection with such use by it.

For trunk lines from the several exchange offices to points outside of the respective exchange District and to telegraph offices, the Lessor may, without further compensation, enjoy all rights of the Licensee to erect and maintain lines, and may use its poles and fixtures, but shall pay a pro rata share of the cost of erecting and maintaining them.

(6) The Lessee admits the validity of all patents relating to telephony and telephonic appliances now or hereafter held by the Licensor or under which it may hold licenses exclusive in their character, and the validity of its title thereto, and will not dispute the same, nor make, use, or be interested in any telephones or telephonic lines or business not licensed by the Licensor or its assigns.

[fol. 3932] (7) The contract between the second party and these who are to use telephones under it, as herein provided, shall express in such form as the Lessor shall from time to time approve, that the telephone is the property of the Licensor; that it is leased and licensed by it only as herein expressed; that all use of it otherwise is an injury to and invasion of the rights of the Licensor as owner thereof and of the patent rights used therein and thereby, entitling it to all the remedies herein provided and to an injunction, and other legal redress, in a suit by it in its name and behalf. The second party shall require every person using said telephones for communications or messages sent or to be sent over other telephone or telegraph lines, to provide for payment of tolls thereon, and to make every such message subject to such stipulations, regulations, and conditions respecting the liability of such lines for errors and mistakes as the Licensor may from time to time require, and for that purpose will incorporate into its subscription contracts and message blanks such provisions and contracts, to be agreed to by the subscriber and customer, as the Licensor may from time to time approve, and will hold the Lessor harmless from all loss and expense consequent upon its failure so to do.

(8) The second party shall charge subscribers to its Exchanges such rental and royalty for the telephones as the Licensor may fix from time to time, for these and other

like exchanges, and also in addition a sum not exorbitant nor unusual for the use of call-bells, batteries, wires, and other appliances, and for services furnished or performed, and may collect both of said sums for a period not exceeding one year in advance. It will make such reports, giving such information regarding the operations of its Exchanges and the prices charged as the Licensor may from time to time request. It shall pay to the Licensor a rental and royalty at the rate per instrument of Seventy (70) per cent, of the telephone rental and royalty fixed as above [fol. 3933] (being a discount of Thirty (30) per cent) to commence on each telephone on the first day of the second calendar month after its shipment by the Licensor, to continue until the instrument shall be put into the possession of the Licensor, or proved to be destroyed, and to be paid in equal monthly payments in advance, at the Licensor's office, on the tenth day of each month up to the last day of the same month. Until otherwise fixed, the rates shall be as follows:

Battery transmitter, each instrument per year	$10.00
Magneto-telephone, each instrument " "	$10.00

Upon each instrument unlawfully detained from the Lessor the second party shall pay ten dollars per month until satisfactory proof of its destruction be furnished; shall pay five dollars for each lost or destroyed otherwise than by fire or inevitable accident, and shall pay the expenses of ordinary repairs; but said payments shall not confer any right to the instrument, nor to its use, nor satisfy any other breach of covenant, nor impair the right of the Licensor to obtain possession of any instrument or lines.

(9) The Licensor may enter the offices and connect with the exchange systems of the second party any lines to points without the territories of such Exchanges respectively, and to telegraph offices, in order to establish communication between customers of the Exchanges and telegraph companies or parties reached by said lines, and may there operate said lines with suitable appliances; the second party will permit and encourage its customers to use such lines, and by its own operators will receive and transmit such messages to and from its customers and subscribers, or make the proper switch-board or other connections for direct communication, as may be requested, and in such

manner, not inconsistent with the proper conduct of its office, as the Licensor shall direct. But if the Licensor is [fol. 3934] not satisfied with the manner in which it is performed, it may establish its own offices and trunk and radiating lines for this purpose. The second party will not, without special leave of the Licensor, so far as it can lawfully prevent it, permit the transmission over such connecting lines of general business messages, market quotations, or news for sale or publication, nor any communications in behalf of other parties than those who directly communicate by the telephone by themselves or their servants or agents personally present at the instruments, and no person engaged in the business of transmitting messages for other parties shall be authorized or knowingly allowed by the second party to transmit such messages over such lines. The second party will cause each of its Exchanges to turn over and deliver to the Licensor and such parties as it may from time to time appoint, exclusively, all messages for electrical transmission to points outside the territory of such Exchange collected by or coming on the wires or within the control of the Exchange, where the Licensor or such party has wires and will transmit the same so far as the second party can lawfully control the same, and unless otherwise specially directed by its customers; but will not solicit such special directions, nor receive and pay tolls for transmission over other lines, unless compellable by law so to do. It shall keep and furnish an account of each such message transmitted or received, and of connections made therefore and shall collect and on demand pay over to the Licensor or its said appointees, respectively, the tolls for transmission beyond the exchange system, according to such rates and rules as each shall establish, and shall exhibit its accounts and the tickets from which they are made, so far as may be proper to verify the same. Each Exchange shall, if and when so requested by the Licensor, make proper switch-board or other connection between the lines of the Licensor or its Licensees from points without its exchange district and terminating in such ex- [fol. 3935] change office, for the purpose thereby of making up a through line between points without such exchange district. In respect of all the business provided for by this section, the second party shall make no charge to its own subscriber or customer, but shall make the following

charges and none others; the second party shall receive upon communications originating within an Exchange and passing over the lines of the Exchange and the extra-territorial lines by direct connection, fifteen per cent of the gross tolls on the extra-territorial line not to exceed five cents for any one message or communication occupying not more than five minutes; in case an Exchange shall be required to make a switch-board connection for the purpose of making up a through line between points without its exchange district, then the Exchange shall receive as compensation for making such connection, such share of the through toll (terminal expenses being first deducted) as may be agreed upon, not however a greater share thereof than ten miles is of the whole length of the through lines so made up, and not in any event to exceed five cents for any one communication occupying not more than five minutes; upon messages collected by an Exchange over its lines or otherwise and forwarded by telegraph, the Exchange shall receive fifty per cent of the commission paid to the Lessor by the telegraph company, and the whole of the compensation for messenger service paid by the telegraph company; for delivering tele-raph messages by telephone to subscribers, and Exchange may have free use of the Lessor's line to the telegraph office, when such use does not interfere with the proper despatch of outgoing business, and may receive from the telegraph company the whole of such compensation as it and the telegraph company may agree upon; for messages delivered by messenger for the telegraph company, it may receive the whole compensation. The Licensor now appoints the Western Union Telegraph Company to perform all telegraphic transmission under this article.

[fol. 3936] (10) If the second party shall fail to pay any sums due hereunder for thirty days after the same shall become payable, or shall violate any other terms or conditions of this contract, or of a contract preliminary hereto between the same parties dated July 27th, 1889, and shall persist in such default, violation, or neglect, or fail to remedy or repair the same for sixty days after written notice thereof from the Licensor, or shall become bankrupt or insolvent, the Licensor may, if it shall so elect, by written notice to the second party (or those in charge of any of its offices), terminate all rights granted by the Licensor here-

under, and thereupon may by its agents sever the circuit on which any telephone is placed, and take possession of and remove the telephone, and for that purpose may enter the premises of the second party and all persons claiming under it; or it may collect, from any sublessee or subscriber, all sums then or thereafter due to it or to the second party for the use of any instruments, circuits, and appliances, or under any subscription contract; or it may, so long as it shall see fit, leave in the enjoyment and use of the telephones any subscriber or other person in actual possession, and collect from him such sums as may then and thereafter be or become due for the use of the telephone and exchange lines, appliances, and services, and for that purpose shall be entitled to and may take possession of all the lines, fixtures, apparatus, appliances, and premises of the second party used for carrying on its business, and occupy and operate the same in connection with said telephones and those of additional customers as exchange system, or connect such lines with offices of its own for that purpose; the Licensor shall have the like right upon and within three months after the termination of the rights of the second party hereunder by efflux of time or otherwise; and may enforce these provisions by an entry, without being deemed guilty of any trespass, or by legal process, including an injunction to prevent any interference with the Licensor (and [fol. 3937] others permitted by it) in the use of said telephones, lines, switch-boards, and appliances. The property as taken, and which does not belong to the Lessor or revert to it hereunder, may be returned within three months from the taking, in which case it shall pay to the second party a reasonable compensation for its use, or the Lessor may retain the same as its own property and shall pay therefor a reasonable price (not exceeding the actual cost) within four months after the taking, and shall account to the second party for all sums collected, which accrued before the Licensor became so entitled to possession, deducting all expenses incident thereto and all that may be due it. The Lessor also reserves all its right and remedies in law and in equity, under the patent laws or otherwise, including the remedy by injunction against the second party or those claiming under it, for the use of any of its patented inventions or instruments not justified by a subsisting license hereunder, or for the violation of any other of its rights.

These rights and remedies of the Lessor shall, in case of any default, if the Lessor shall so elect, apply only to the Exchange or Exchanges in which such default has occurred. The Lessor may also use the name of the second party to protect its interests and to enforce its rights hereunder, and the second party shall execute assignments in accordance herewith.

(11) This contract is personal to the second party herein named, and any assignment or attempt to assign it, or the rights granted or lines established hereunder or any or either of them, by act of the party or operation of law, without the written consent of the Licensor, will be violation hereof, and a good ground for a cancellation hereof by the Licensor; The party of the second part promises that it will keep and observe all the stipulations herein contained on its part to be kept and performed. Whenever the Licensor grants to others the rights for connecting lines or any other rights remaining to it, the stipulations [fol. 3938] hereof relating hereto shall be binding upon and enure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to perform the stipulations hereof its title to the telephones hereby leased and the patent rights under which they are licensed, and its then existing interests hereunder, it is agreed that the provisions hereof enure to the benefit of and are binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereto, and this said American Bell Telephone Company shall no longer be responsible hereunder.

The Licensee also agrees that it will not allow any telegraph company to use or to have any rights, or poles or other structures leased or put up by or belonging to or under the control of said Licensee without the written assent of the said American Bell Telephone Company.

Touching the lines which the first party may desire and direct to be built connecting the Exchanges of the second party with the Telegraph Offices of the Company or Companies which the first party may appoint to receive the telegraph messages to be turned over by said second party.

Whereas the first party has at the request of the second party in consideration of its undertaking hereinafter in this paragraph contained consented to increase the part to be paid the Exchange of the commission paid the first party by the Telegraph Company upon messages turned over from Twenty-five (25) per cent to Fifty (50) per cent thereof:

Now the second party in consideration thereof agrees that it will at its own cost and without charge or expense to said first party build, equip and maintain such lines and furnish all instruments necessary to be used for the operation thereof, except telephones to be used in the telegraph office, but that such lines when built shall become and remain the property of said first party.

[fol. 3939] Discount on telephones as given in surrendered contract (as per Exhibit A) to continue until June 1st, 1891.

*The following erasures viz.: eight (8) words on line 22, two (2) letters two (2) figures and one (1) word on line 23, ten (10) words and one (1) figure on line 56, one (1) word on line 170, four (4) words on line 217, all the words on lines 218 and 219, and six (6) words on line 220, and the following interlineations viz.: "fifty" on line 170 and "or of a contract preliminary hereto between the same parties dated July 27th 1889" on line 179, were made before signature by either party.

Signed in duplicate on the day first above written.

[Seal A. B. T. Co.]

The American Bell Telephone Co., (Sd.) by John E. Hudson, (Sd.) C. J. F., President. [Seal Sowestn. Co.] The Southwestern Telegraph and Telephone Co., (Sd.) by Levi Sprague, Prest. (Sd.) Chas. J. Glidden, Secy.

Contract for Extraterritorial Connecting Lines Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 889)

Form 113D

Contract for Extraterritorial Connecting Lines

This agreement, made this Twenty-seventh day of July, A. D. 1889, by and between the American Bell Telephone

*This paragraph refers to interlineations in the printed form on which the original agreement was made.

[fol. 3940] Company, a corporation duly formed under the laws of Massachusetts, Lessor and Licensor, of the first part, and the Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, lessee and Licensee, of the second part, witnesseth:

1. Said Licensee desires to obtain the right to use upon lines between telephonic exchange districts established or which may be established in the following described territory, viz.:

The State of Arkansas and Texas, telephones to be obtained from *from* the Lessor and under lease and license from it, under its two patents granted Alexander Graham Bell, No. 174,465, dated March 7, 1876, and 186,787, dated January 30, 1877, and under other patents which it may hereafter own or have the right to use, applicable thereto; and also to avail itself of and enjoy the right of connecting with the exchange systems established within said territory, as provided and stipulated in favor of the Lessor in its exchange contracts for these systems, (copies of which stipulations have been furnished to the Licensee, and the terms of which he is to conform to so far as they relate to business to be done hereunder) and of connecting with exchange systems which may hereafter be established in exchange districts in said territory, under contracts to be made by the Lessor therefor, to contain stipulations substantially like those in the Lessor's Standard Form 109 C, a copy of which has been furnished to the Lessee, and wishes to use, and allow others to use, said lines for personal communication between persons in different exchange districts in said territory; now it is agreed:

(2) Said second party shall by the establishment of such lines, so far as it is authorized so to do by this contract, satisfy all reasonable demands of the public therefor, and shall be diligent to increase the number of its said lines.

[fol. 3941] The rights hereby granted to the Lessee shall be perpetual unless determined as hereinafter provided:

3. The Lessee may construct lines between exchanges in said territory, and may use such lines for telephonic personal communication between a customer in one such exchange district and a customer in another such exchange district, and not otherwise, except in connection with lines

mentioned in Article 6 hereof owned or specially licensed by the Lessor, and by it designated for that purpose, and then only as and for the purposes expressed in said Article 6. The Lessee shall not directly or indirectly connect its lines with any telephone or telegraph line or telephone exchange, except lines with which it has been by the Lessor specially authorized to connect; nor deliver messages to be forwarded to designation by telegraph to any telegraph company, except such as may be specially designated by the Lessor for that purpose, so far as it can lawfully control the same, or unless specially directed by a customer so to do (but it will not solicit such special direction nor receive and pay tolls over other lines unless compellable by law so to do). For the purpose of establishing telephonic personal communication between customers as aforesaid, the Lessee may have and exercise all the right to construct and operate telephone lines in said districts, and there maintain suitable offices and connect with exchange systems established or to be established, as aforesaid, which the Lessor has reserved and is or may be entitled to grant for extraterritorial connecting lines under licenses to exchanges made or to be made as aforesaid; but the Lessee shall connect with each local exchange and do its business so far as the same can, in the opinion of the Lessor, conveniently be so done, with the customers thereof through said exchange, unless the American Bell Telephone Company, or its successors, shall decide that the exchange fails to furnish proper facilities, for the purpose of this contract an exchange district means a territory, not to cover [fol. 3942] more than a single town or city, or a circle of fifteen miles radius measured from a central point, which the Licensor has included and covered or may hereafter include and cover in and by an exchange license.

4. The Licensor, at its general office or factory, will deliver to the Lessee, as called for, electric speaking telephones, made and to be used under its patents during the existence of the rights hereby granted and as herein set forth and permitted; and all telephones delivered to the Lessee during the continuance hereof shall be deemed to be furnished hereunder, unless otherwise specially designated by the Licensor. They will be of such character and pattern and bear such marks as the Lessor shall from time to time determine, but the Lessee may choose from among

such standard patterns. Each of said telephones shall remain the property of the Licensor, and is hereby leased, and the use of it is hereby licensed for the purposes herein declared for the term of one year from the day when rent and royalty begins to accrue on it, as herein provided; but the due payment thereof to the Licensor, and the due performance of the stipulations hereof during said year by the Lessee and those using the telephone under it, shall ipso facto operate to renew the lease and license for another year, and so on until the determination hereof. The licensee shall pay to the Licensor seventy (70) per cent of the telephone rental and royalty which shall be fixed from time to time by the Licensor (being a discount of Thirty (30) per cent), to commence on each instrument on the first day of the second calendar month after its shipment by the Licensor, to continue until the instrument shall be put into the possession of the Licensor, or proved to be destroyed, and to be paid in equal monthly payments in advance at the Licensor's office on the tenth day of each month up to the last day of the same month. Until otherwise fixed, the rates shall be as follows:

[fol. 3943] Battery transmitter, each instrument per year $10.00
Magneto-telephone, each instrument per year $10.00

Upon each instrument unlawfully detained from the Lessor, the Lessee shall pay five dollars per month until satisfactory proof of its destruction be furnished, and five dollars for each lost or destroyed otherwise than by fire or inevitable accident, and shall also bear the expense of ordinary repairs; but said payments shall not confer any right to the instrument, nor to its use, nor satisfy any other breach of covenant, nor impair the right of the Licensor to obtain possession of any instrument or lines.

5. The right and license hereby granted is the right and license to use said telephones to carry on personal communication, upon their own business, by and between customers, and their employes personally present at instruments in different exchange districts within the territory above described, over circuits composed exclusively of said authorized lines owned by the Lessee and the lines of the exchange licensed by the Licensor, and with which the

Licensee is authorized to connect as aforesaid, and between any such customer and a customer so using the telephone in a place with which the second party is not hereby authorized to connect, by means of such line of the Lessee, and other lines and instruments specially licensed by the Licensor therefor; but the telephones furnished hereunder are not to be used to connect parties in the same exchange district, nor the transmission of general business messages, market quotations, or news for sale or publication, in competition with the business of any telegraph company; and the Lessee, so far as it can lawfully and properly prevent it, will not permit the same to be so used. The term "general business messages" is defined to mean all communications in behalf of other parties than those who directly communicate by the telephone by themselves or their servants or agents personally present at the instruments, and no per-[fol. 3944] son engaged in the business of transmitting messages for other parties shall be authorized or knowingly allowed by the Lessee, its servants or agents, to transmit such messages through the telephone. The Lessor will not furnish or license telephones to any other party to establish such personal communication between persons in different exchange districts, both of which are within said territory, while the rights of the Lessee hereunder exist, except so far as the Lessor's existing contracts with the Western Union Telegraph Company, and with others, may require it so to do, or as it may see fit so to do under contracts hereafter to be made for private, club, social, and other lines substantially as defined in its Standard Form No. 116 B, but the Lessee shall furnish sufficient general lines for general customers, and special lines for individual or associated customers, between exchange districts throughout said territory, and for the purposes aforesaid, at prices which shall be reasonable under the circumstances hereunder.

6. The Lessor will license to be used with such telephones the inventions in call bells, switches, switch-board, and other apparatus needed for such telephone lines, which it can so license, upon such royalties as it may from time to time establish, not greater than these fixed for others under similar circumstances, but such call bells, switches, switch-boards, and other apparatus shall be used only with telephones licensed by the Lessor, and the Lessee agrees

not to use them otherwise, nor to dispose of them to any one except to those so licensed, or to the licensed manufacturers of the Lessor. The Licensee may enjoy any rights of way and similar franchises to maintain said lines which the Lessor can permit him to use, when and so long as, in the judgment of the Lessor, it shall not interfere with the enjoyment thereof by the Lessor or its other grantees, and shall pay whatever may be due to third persons, if anything, growing out of or in connection with such use by it. The Lessor reserves the right to use tele- [fol. 3945] phones on lines passing over the routes or any or either of them of the lines hereby licensed, and connecting, with each other or with said exchanges, places with which the Lessee is not hereby authorized to connect, for the purpose of establishing personal communication or transmitting messages between such places and between such places and said exchanges, and, to establish lines for that purpose, may enjoy any rights of the Lessee to erect and maintain lines, and may string its wires on the poles of the Lessee, paying therefor a pole rental of $4.00 per mile per annum for each wire. The Lessee will also allow the Lessor to connect the wires of any such line with its said lines in order to constitute thereby a through line, of which the Lessee's lines or any or either of them or any part of either of them can form a portion or link, in order to forward through messages, will make or permit to be made convenient switchboard or other connections for that purpose, and as compensation therefor will take a share of the through toll (terminal expenses being first deducted) pro rata according to distance, not greater than that customarily charged by it for like distance, and will also allow any telephone exchange to be designated by the Lessor to connect with its lines for the purpose and substantially in the manner described in said Standard Form 109 C. In respect of all communications originating on its lines and which are to be forwarded over any other lines, the Lessee shall require the customer or subscriber to bind himself by and make every message subject to such contracts, stipulations and limitations of liability of such other lines as the Licensor may from time to time require, in such form as it may from time to time prescribe, and will hold the Lessor harmless from all loss or expense consequent upon its failure so to do.

7. The Lessee admits the validity of all patents relating to telephony and telephonic appliances, now or hereafter held by the Licensor, or under which it may hold licenses [fol. 3946] exclusive in their character and the validity of its title thereto, and will not dispute the same nor make, use, or be interested in any telephones or telephonic lines or business not licensed by the Licensor or its assigns.

8. The Lessee will pay to the exchanges established, or which may hereafter be established, and with which it shall connect as aforesaid, such sums as such exchanges are or shall be entitled to receive under their exchange contracts, made or to be made, for making connections with extra-territorial lines. And the Lessee will also pay to the Lessor, in addition to said telephone rental and royalty, and in consideration of the further rights and privileges hereby granted, fifteen (15) per cent of the Lessee's gross receipts from subscriptions and tolls (which tolls shall not be less than at the rate of fifteen cents for the first ten miles or fraction thereof and five cents for each additional ten miles or fraction thereof for a communication occuping not more than five minutes), and from other sources, after deducting for terminal expenses such sums as it may have to pay to the terminal exchange not exceeding those chargeable under exchange contracts made or to be made by the Licensor as aforesaid. Said payments are to be made to the Lessor at its office on the tenth day of each month, upon all receipts up to the first day thereof. The Lessee shall keep full accounts of such receipts and payments, furnish copies thereof to the Licensor upon request, and exhibit its original accounts and vouchers so far as may be proper to verify the same.

9. The lines to be built hereunder shall be sufficient and suitable for the purposes contemplated hereby.

10. The Lessee may place the telephones furnished hereunder in its own offices, for use, by general customers, as herein stated and limited, or may place them under subleases and licenses in connection with its lines, on the premises of subscribers or special customers for such use. Such [fol. 3947] subleases and licenses shall, in such form as the Licensor shall from time to time approve, express the title of the Licensor to the Telephone and the patents, the extent of the license hereby granted, the purposes for which

the telephone may be used, that any other use of any telephone by any person, or non-payment of the rental and royalty to the Licensor, is an injury to and invasion of its rights as owner thereof and of the patent rights used therein and thereby, and entitling it to all rights and remedies in law and in equity, under the patent laws and as herein expressed otherwise, including the remedy by injunction against the person in possession thereof, and all others who have misused the same as aforesaid for any use not justified by a subsisting license, or for the violation of any other of its rights. It may also enforce against such sub-licenses all rights and pursue all remedies given by and under such sub-licenses, and may use the name of the Lessee for such purpose, or may require the Lessee, at his own expense, to enforce the terms of such contract.

11. If the Lessee shall fail to make any of the payments herein stipulated when due, or shall fail to keep any of the terms hereof, or of a contract preliminary hereto between the same parties dated July 27th, 1889, and such default shall continue during a period of sixty days after written notice thereof from the Lessor, or shall become bankrupt or insolvent, the Licensor may, if it shall so elect, by a written notice to the Lessee (or those in charge of any of its principal offices) terminate all rights granted by the Licensor hereunder, and by itself or those designated by it for the purpose, by due process of law or by actual entry, may and shall be entitled to repossess itself of the rights and privileges herein granted, and thereafter use and enjoy the same; and especially may take possession of and remove said telephones; or sever the wires to which they are connected, and connect its own wires to said severed wires, [fol. 3948] telephones, and apparatus, and use the same by itself and by those whom it may permit; or it may, so long as it shall see fit, leave in the enjoyment and use of the telephones any person in actual possession, and collect from him such sums as are or may become due for the use of the telephones, wires and appliances, used therewith, and for that purpose shall be entitled to and may take possession of all the lines, fixtures, apparatus, appliances and premises of the Lessee used for carrying on this business, and occupy and operate the same in connection with said telephones and other telephones connected or to be connected therewith, or connect such lines with offices of

its own for that purpose. The Licensor shall have the like right upon or within three months after the termination of the rights of the Licensee hereunder by efflux of time or otherwise; and may enforce this provision by an entry without being deemed guilty of any trespass, or by legal process, including an injunction to prevent any interference with the Licensor and others permitted by it in the use of said telephones, lines and apparatus. The property so taken and which does not belong to the Lessor or revert to it hereunder may be returned within three months from the taking, in which case the Lessor shall pay to the Lessee a reasonable compensation for the use thereof, or the Lessor may retain the same as its own property, and shall pay therefore a reasonable price, in no case exceeding the actual cost, within four months after the taking, and shall account to the Lessee for all sums collected which accrued before the Licensor became so entitled to possession, first deducting all expenses incident thereto, and all that may be due from the Lessee to it. The Lessor also reserves all its rights and remedies in law and in equity under the patent laws or otherwise, including the remedy by injunction against the Lessee or those claiming under it, for the use of any of its patented inventions or instruments not justified by a subsisting license hereunder, or for the violation [fol. 3949] of any other of its rights. The Lessor may also use the name of the Lessee to protect its interests and enforce its rights hereunder, and the Lessee shall execute assignments in accordance herewith.

12. This contract is personal to the Lessee herein named, and any assignment or attempt to assign the same or the lines established hereunder, or any or either of them, by act of the party or operation of law, without the written consent of the Licensor, shall be violation hereof, and good ground for a cancellation hereof by the Licensor; The party of the second party covenants that he will keep and observe all the stipulations herein contained on his part to be kept and performed. Whenever the Licensor grants to others the rights for exchange or any of its rights under Article 6 hereof or any other rights remaining to it, the stipulations hereof relating thereto shall be binding upon and enure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to

perform the stipulations thereof, its title to the telephones hereby leased, and the patent rights under which they are licensed, and its then existing rights hereunder, it is agreed that the provisions hereof enure to the benefit of and are binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party, and that said American Bell Telephone Company shall no longer be responsible hereunder. Words herein referring to the party of the second party shall be taken to be of such number and gender as may be required.

[fol. 3950] Contract Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated November 1, 1907, Cancelling Previous Contracts (Rec., Vol. II, 901)

Memorandum of an agreement, made this first day of November, 1907, by and between The American Bell Telephone Company, incorporated under the laws of Massachusetts, of the first part, and The Southwestern Telegraph and Telephone Company, incorporated under the laws of New York, of the second part,

Witnesseth:

Whereas, said Companies entered into certain contracts dated July 27, 1889, in Forms 109-D, 113-D, and 116-C, respectively, and also a contract preliminary thereto, bearing the same date, under which said The American Bell Telephone Company agreed to lease and license to said The Southwestern Telegraph and Telephone Company telephone instruments and to furnish to said Company certain other services and things, as expressed in said contracts and in certain contracts in Form 113-C, made subsequent to said date, and

Whereas said contracts have in certain respects become obsolete, and it is desired by the parties hereto to cancel the same and to make a new agreement in place thereof,

Now it is agreed:

That all contracts now existing between said Companies in Forms 109-D, 113-C, 113-D and 116-C, respectively, and said preliminary agreement, are hereby cancelled as of this date, but said The American Bell Telephone Company shall continue to furnish said The Southwestern Telegraph and Telephone Company telephone instruments, license their use, and the use of telephone appliances, so long as this

agreement remains in force, under all patents now or hereafter owned or controlled by it, said The American Bell Telephone Company, and furnish other services and things [fol. 3951] as heretofore, and said The Southwestern Telegraph and Telephone Company shall pay to said The American Bell Telephone Company the same consideration in money which it has heretofore paid under the terms of the letter of said The American Bell Telephone Company, dated November 21, 1902.

Said The Southwestern Telegraph and Telephone Company shall assume and pay any and all taxes, whether municipal, county, state or other, assessed on or on account of or by reason of the telephone instruments furnished hereunder.

Cancellation of the 15% Commission under the Extra-territorial Contract Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated May 11, 1898 (Rec., Vol. II, 919)

Copy

The American Bell Telephone Company,

No. 125 Milk Street

P. O. Drawer 2

Boston, May 2, 1898.

Licensees of the American Bell Telephone Company:

Referring to the licenses for extra territorial connecting lines granted you by this Company, and to your agreement therein contained to pay this Company a portion or frac- [fol. 3952] tion of the gross receipts from business done on such lines, this Company proposes to release you and does hereby release you upon your acceptance hereof, from your obligation to make such payment from business done after April 30, 1898.

[fol. 3953] 4½% Modification of 1902 (Rec., Vol. II, 922)

Copy

[redacted] Telephone and Telegraph Company

November 29, 1902.

The [redacted]rn Telegraph & Telephone Company, Dallas, T[redacted]

GENTLEMEN: Enclosed herewith is a communication from The American Bell Telephone Company offering to accept, in lieu of the payments now made by you under your contracts with that Company by way of rental upon telephone instruments, a percentage of the total gross earnings of your Company, as defined in the circular.

This plan has been submitted to officers of practically all of the operating companies throughout the United States and seems to meet with general approval. It involves a substantial reduction in the amounts paid by the operating companies.

While I believe that the plan and the details as set out in the enclosed letter are entirely clear, I take the liberty of calling attention to some of the clauses in the letter, that their intent and purpose may be readily understood.

The second clause, as to the way in which the gross earnings of a sub-licensee company is which a Bell operating company is interested shall be dealt with, applies only to a few cases throughout the country in which an operating company has acquired an interest in a sub-licensee com-[fol. 3954] pany. It is not impossible that other such cases may from time to time arise, and a rule should be established for dealing with them.

The methods of return and payment under this plan are assimilated as far as may be with those now in force.

The memorandum appended to the letter is for the sole purpose of securing uniformity of accounts and of methods of making up the gross earnings. The underlying principle on which the memorandum is based is, that the actual earnings of all telephones shall form part of the gross earnings, but that a telephone which is in fact free shall not be treated as if it contributed anything to the gross earnings.

It is only necessary to call attention to one provision of the memorandum, which is in the nature of a compromise.

It is easy to deal with the subjects-matter of clauses (a), (b), (d), (e), (f), (g), (h) and (i), for it is clear that the

uses referred to in (a) and (b) involve the actual earnings, while those referred to in (d) to (i), inclusive, do not involve actual earnings of such a character as to be counted into the gross earnings.

The matter referred to in (c), however, are incapable of accurate analysis. In some such cases telephones are furnished to municipal or other public corporations for an actual value received, and in other cases there is no direct actual value received, although the importance and necessity of giving the corporation telephones for which no cash payment is made may be just as great as in the former case. In some cases the corporation has the right by law to exact free telephones as a condition of the grant of a franchise, in which case the telephone is leased for the actual value received; while in other cases the corporation has no such right, and therefore the furnishing of a telephone free or at a discount is a voluntary act on the part of the operating company, for which technically it cannot be said to receive [fol. 3955] real value. It seems clear, therefore, that it is better to adopt an arbitrary rule covering all cases in which telephones are supplied to municipal or other public corporations without payment or at a discount, and the plan adopted, as stated in the memorandum, is that in all such cases, whatever may be the circumstances or conditions, such telephones shall be counted as contributing to the gross earnings of the operating company at the rate of nine dollars a year unless a larger sum is actually received in cash.

This compromise meets with the approval of the operating companies to whom it has been submitted. The matter is of small moment, and it is dealt with only that there may be a uniform basis upon which the returns and payments shall be made by all companies.

It is believed that the advantages of the new plan over and above the reduction involved, will be apparent. It is fair and simple and will result in the elimination of a great amount of bookkeeping that is now necessary in order to determine the telephone rentals and rebates.

I will add that it is our expectation to relieve the operating companies from the obligations of keeping a record of each telephone instrument by its serial number as is required at present. This, however, will form the subject-matter of a subsequent communication.

For convenience, I enclose also a form of vote that would be a proper form by which to indicate your assent to the plan set out in the letter.

Very truly yours,

(Sd.) F. P. Fish, President.

Copy.

[fol. 3956] Copy

The American Bell Telephone Company

November 21, 1902.

The Southwestern Telegraph and Telephone Company, Dallas, Texas:

The American Bell Telephone Company hereby offers, until further notice, to substitute for the rental upon telephone instruments (magneto telephones and battery transmitters) payable by you under its license contracts held by you and circulars in modification thereof, four and one-half per cent (4½%) of the total gross earnings of your company, and of any sub-companies through which you may operate, from exchange, toll and private line business and from all other business done in your territory in the operation of which telephones are now or may hereafter be used, including your receipts from sub-licensees.

[fol. 3957] Said percentage will cover all instruments in use by you or under your authority in your territory, including instruments used on switchboards or for other operating purposes and those for which no consideration is received by you, and also will cover those in stock, which last are not to exceed three per cent (3%) of the total number charged to you. It is understood that you will use your best endeavors to limit the number of instruments to the needs of the service.

[fol. 3958] Copy

American Telephone and Telegraph Company

December 29, 1902.

The Southwestern Telegraph and Telephone Company, Dallas, Texas:

Referring to the letter of this company dated November 21, 1902, offering until further notice to substitute for the rental upon telephone instruments (magneto telephones

and battery transmitters) payable by your company under its license contracts and circulars in modification thereof, four and one-half (4½%) per cent of the total gross earnings of your company computed as therein provided, and to the clause in said letter "This offer when accepted will not become binding until this company shall declare the plan effective and upon such declaration shall take effect as of January 1, 1902."

You are advised that said plan is hereby declared effective as of and from January one, nineteen hundred and two.

Our Treasurer will send to you at early date a request for the necessary information to enable him to determine the amount to be credited to your company for the year 1902 under the above offer.

[fol. 3959] Consent by Licensees given to American Bell Telephone Company to have Western Electric Company Sell Telephones and Transmitters to Independent Telephone Companies (Rec., Vol. II, 930)

Copy

Whereas it has been found desirable that The American Bell Telephone Company should have the power to authorize the Western Electric Company to sell telephones and Transmitters in the open market to all buyers, and

Whereas the exclusive right to use telephones for certain purposes granted to this Company by said The American Bell Telephone Company in its license contracts may be construed to prevent such sale.

Resolved: that the President be authorized to notify The American Bell Telephone Company that this Company agrees that said license contracts shall be so construed as not to prevent The American Bell Telephone Company from authorizing such sale.

Copy

The American Bell Telephone Company

Boston, October 3, 1907.

The Southwestern Telegraph and Telephone Company, Dallas, Texas.

GENTLEMEN: Referring to the vote of your Executive Committee passed September 17, 1907, touching the sale

of telephones and transmitters in the open market to all buyers, I am authorized to accept for The American Bell Telephone Company the construction of a license contract [fol. 3960] expressed in said vote and to inform you that this Company will act in accordance therewith.

Yours very truly,

(Sd.) Theo. N. Vail, President.

Copy

American Telephone and Telegraph Company

October 9th, 1920.

The Southwestern Telegraph and Telephone Company, Dallas, Texas.

GENTLEMEN: Your system of lines and exchanges has heretofore been operated solely with instruments furnished by this Company. Even in the case of a sublicense, sublicensee has been required to use such instruments upon all lines connecting with your system. As the Western Electric Company is about to sell telephone instruments and appliances, it seems to us that this is an appropriate time to revise and extend somewhat rules which have heretofore been followed with regard to the telephone instruments to be used upon connecting lines. We suggest, therefore, that hereafter in making sublicenses and contracts for the interchange of business you do not limit yourself solely to those who use telephones furnished by us or sold by the Western Electric Company but that, in appropriate cases, you make such contracts with companies and individuals even when they use other telephones, provided first class instruments are used and the lines are maintained and operated at such a standard of efficiency as not to impair the quality of service furnished over the joint lines.

This connection with such companies and individuals should be limited to farmers' lines, so-called, or lines of a similar character, to lines operated by railroad, and to all exchanges located wholly within your territory and not con- [fol. 3961] nected with lines and exchanges in the territory of any other of our licensees.

It is important in making such contracts that great care be taken, in order that no system may be built up that will impair the value to the public of your own system or interfere with the system established by your neighbors.

Yours very truly,

(Sd:) Theo. N. Vail, President.

[fol. 3962] Opinion of General Counsel to American Company Interpreting the Language of the 4½% Modification of 1902 (Rec., Vol. II, 934)

Copy

Shreeve and Vacuum Tube Repeaters

The American Bell Telephone Company, 125 Milk Street

P. O. Drawer 2

Boston, March 28, 1916.

Southwestern Telegraph & Telephone Co. (N. Y.), St. Louis, Missouri, Mr. H. J. Pettengill, President.

Dear Sir: I enclose a copy of two resolutions adopted by the Executive Committee of the American Telephone and Telegraph Company on March 15, 1916, relative to furnishing to the associated companies Shreeve and vacuum [fol. 3963] tube repeaters. A copy of our General Counsel's opinion upon this matter is also enclosed, as perhaps of interest.

If your company's construction of the License contract as amended, agrees with that set forth in these resolutions, will you please ask your Board of Directors or Executive Committee to pass a resolution assenting to this construction?

At your convenience please advise me of your company's action.

Yours truly,

(Sd.) R. W. Devonshire, General Manager.

Resolved: That the officers of this Company be and they are hereby directed to advise each of the associated companies that the license contracts, as amended, existing between this Company and each of its associated companies

do not, as construed by this Company, require this Company to furnish to the associated companies what are known as Shreeve and vacuum tube repeaters without a specific charge therefore in addition to the Four and One-half per cent (4½%) payments under said contracts.

Resolved further: That the officers of this Company be permitted to furnish said repeaters without specific charge therefor in addition to said four and one-half per cent (4½%) payment, to such of the associated companies as accept this construction of the said license contracts, upon the definite agreement by said companies that this Company shall at any time have the right to discontinue said practice and to make reasonable charges, in addition to said four and one-half per cent (4½%) payment, for all such repeaters thereafter furnished.

[fol. 3964] Copy

Memorandum for U. N. Bethell, Esq., Senior Vice-President

New York, February 17, 1916 (M. R.)

The Shreeve and Vacuum tube repeaters are devices for extending the radius for communication by telephone. When used in connection with telephonic communication, each of these decices accomplishes this purpose by reproducing in the relatively strong electric current passing through a second circuit the electrical undulations which characterize a much diminished current passing through the preceding circuit, the preceding circuit being connected with the second circuit through the repeater. The variations to be effected in the current in the second circuit are in each instance identical, this being accomplished in the case of the Shreeve repeater through mechanical means and in the case of the vacuum tube repeater through electrical means. So far as the question under consideration is concerned, it is unnecessary to make any distinction between the two classes of repeaters.

The question which is presented to me is whether these repeaters are telephones which the terms of the license contracts require this company to furnish to its associated companies as a part of the consideration for which the four and one-half per cent (4½%) payment is made. In my opinion, this question should be answered in the negative.

I think it clear that each of these repeaters is a telephone in the sense that if the Bell patents had not expired, it could not legally be manufactured and sold except by license under them. This, however, is not the question.

The license payment did not pay for everything which the licensor was bound to furnish under the contracts. It paid the rental for the telephones which were leased but [fol. 3965] did not pay for "the inventions and call bells, switches, switchboards and other apparatus needed for such telephones lines which it (the licensor) can so license."

Giving due weight to all of the provisions of these original contracts, it is my conclusion that by the telephones to be furnished under them were meant the instruments which were to be furnished to the subscribers for their use and for which the licensees were to charge subscribers such rentals and royalty as might be fixed from time to time by the licensor.

If there was any doubt under the original contracts, I think it is removed by the modification of these contracts by which four and one-half per cent (4½%) of the gross earnings was fixed as the measure of the payments under them. This modification was made by letter, sent to each of the licensee companies under date of November 21, 1902, and accepted by each of these companies. This letter contains the following language:

"The American Bell Telephone Company hereby offers, until further notice to substitute for the rental upon telephone instruments (magneto telephones and battery transmitters) payable by you under its license contracts held by you and circulars in modification thereof, four and one-half per cent (4½%) of the total gross earnings of your company."

What has been underscored definitely describes the telephone instruments which the associated companies are entitled to have furnished in consideration of this payment. They are magneto telephones and battery transmitters. This language had at the date of said letter, and has now, a well defined meaning which does not include repeaters. Moreover, no repeater available for commercial use had been developed at the time these letters were written.

[fol. 3966] The number of repeaters now in use is very small, and no charge is being made for them. I think it

desirable that this practice be continued so long as there is no extension in their use, but it should be with the definite understanding that the Company is not under obligation to continue it, and that it is without prejudice to the right of the Company to require payment for the repeaters at any time that it may wish to do so.

Yours very truly,

(Sd.) N. T. Guernsey, General Counsel.

Copy

Southwestern Bell Telephone System

April 25, 1916.

The American Bell Telephone Company, Mr. R. W. Devonshire, General Manager, 125 Milk Street, Boston, Mass.

DEAR SIR: I enclose herewith copy of a resolution passed by the Executive Committee of The Southwestern Telegraph and Telephone Company (New York) at a meeting held on April 25, 1916, relative to Shreeve and vacuum tube repeaters.

Yours truly, The Southwestern Telegraph and Telephone Company (N. Y.). (Sd.) J. P. Crowley, Secretary.

(Here follow side folios 3967 and 3968)

DEFENDANT'S EXHIBIT 193

[illegible] TELEGRAPH COMPANY

(Excluding Long Lines Department)

APPORTIONMENT OF DEPARTMENTAL EXPENSE BETWEEN (a) THOSE RELATED TO THE FURNISHING OF LICENSE CONTRACT SERVICES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO

BENEFIT AND MEDICAL DEPARTMENT

Year	Total Departmental Expense (1)	Specifically Allocated: License Contract (2)	Specifically Allocated: Other (3)	Amt. Not Specifically Allocated (Apportioned on Basis of): Total (4)	License Contract: Amount (5)	License Contract: % of (4) (6)	Other: Amount (7)	Other: % of (8
1923	$300,907.16							
(a) General Staff	43,587.00			$ 43,587	$ 34,870	80%	$ 8,717	2
(b) Benefit	24,424.00			24,424				
(c) Medical	60,002.00		4,200	55,802				
(d) Benefit Payments, etc.	172,894.00			172,894				
1924	245,875.70							
(a) General Staff	57,587.00			57,587	46,070	80	11,517	2
(b) Benefit	24,726.00			24,726				
(c) Medical	30,938.00			30,938				
(d) Benefit Payments, etc.	132,625.00			132,625				
1925	285,773.71							
(a) General Staff	102,089.00			102,089	81,671	80	20,418	20
(b) Benefit	15,040.00			15,040				
(c) Medical	37,711.00			37,711				
(d) Benefit Payments, etc.	130,934.00			130,934				
1926	330,517.34							
(a) General Staff	150,392.00			150,392	120,314	80	30,078	20
(b) Benefit	17,329.00			17,329				
(c) Medical	34,664.00			34,664				
(d) Benefit Payments, etc.	128,132.00			128,132				
1927	582,186.90							
(a) General Staff	166,368.00			166,368	183,094	80	33,274	20
(b) Benefit	20,579.00			20,579				
(c) Medical	38,857.00			38,857				
(d) Benefit Payments, Accruals, etc.	356,383.00			356,383				
1928	64,815.49							
(a) General Staff	180,559.00			180,559	144,447	80	36,112	20
(b) Benefit	20,913.00			20,913				
(c) Medical	38,209.00			38,209				
(d) Benefit Payments, Accruals, etc.	325,135.00			325,135				
1929	650,873.04							
(a) General Staff	198,526.00			[illegible]				

DEFENDANT'S EXHIBIT 193

[illegible] AND TELEGRAPH COMPANY
(Excluding Long Lines Department)

STATEMENT OF DEPRECIATION EXPENSE BETWEEN (a) THOSE RELATED TO THE FURNISHING OF PLANT FACILITIES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO 1930

Specifically Allocated		Amt. Not Specifically Allocated (Apportioned on Basis of Study)					Total			
			License Contract		Other		License Contract		Other	
License Contract (2)	Other (3)	Total (4)	Amount (5)	% of (4) (6)	Amount (7)	% of (4) (8)	Amount (9)	% of (1) (10)	Amount (11)	% of (1) (12)
		$ 43,587	$ 34,870	80%	$ 8,717	20				
		24,424								
	4,200	55,802								
		172,394								
		57,587	46,070	80	11,517	20				
		24,726								
		30,938								
		132,625								
		102,089	81,671	80	20,418	20				
		15,040								
		37,711								
		130,934								
		150,392	120,314	80	30,078	20				
		17,329								
		34,664								
		128,132								
		166,368	133,094	80	33,274	20				
		20,579								
		38,857								
		356,383								
		180,559	144,447	80	36,112	20				
		20,013								
		38,209								
		326,135								

(d) Benefit Payments, Accruals, etc.	325,135.00			325,135				
1929	650,873.04							
(a) General Staff	198,536.00			198,536	158,829	80	39,707	20
(b) Benefit	20,405.00			20,405				
(c) Medical	37,722.00			37,722				
(d) Benefit Payments, Accruals, etc.	394,210.00			394,210				
1930	708,605.38							
(a) General Staff	229,200.00			229,200	183,300	80		20
(b) Benefit	21,290.00			21,200				
(c) Medical	37,547.00			27,547				
(d) Benefit Payments, Accruals, etc.	420,568.00			420,568				

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(Excluding Long Lines Department)
APPORTIONMENT OF DEPARTMENTAL EXPENSES BETWEEN (a) THOSE RELATED TO THE FURNISHING OF LICENSE CONTRACT SERVICES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO 1930

PERSONNEL RELATIONS DEPARTMENT

Year	Total Departmental Expense (1)	Specifically Allocated: License Contract (2)	Specifically Allocated: Other (3)	Amt. Not Specifically Allocated (Apportioned on Basis of Study): Total (4)	License Contract: Amount (5)	License Contract: % of (4) (6)	Other: Amount (7)	Other: % of (4) (8)	Total: License Contract: Amount (9)	Total: License Contract: % of (1) (10)	Total: Other: Amount (11)	Total: Other: % of (1) (12)
1923	$301,834.34											
Administration				56,[illegible]36	51,296	90	5,700	10				
Personnel				131,[illegible]3	118,751	90	13,195	10				
Public Relations				30,[illegible]58	30,[illegible]58	100	-	-				
Special Training				[illegible],[illegible]29	35,948	80	8,[illegible]37	20				
TOTAL				301,[illegible]	276,[illegible]53	91	25,382	9				
1924	269,589.29											
Administration				63,197	55,977	90	6,220	10				
Personnel				133,270	119,943	90	13,327	10				
Public Relations				14,[illegible]23	14,[illegible]23	100	-	-				
Special Training				[illegible],399	[illegible],919	80	11,980	20				
TOTAL				269,[illegible]89	238,062	87	31,527	13				
1925	317,749.00											
Administration				62,263	56,037	90	6,226	10				
Personnel				156,[illegible]30	140,791	90	15,[illegible]39	10				
Public Relations				14,719	14,719	100	-	-				
Special Training				[illegible],338	67,466	80	16,866	20				
TOTAL				317,[illegible]8	279,013	88	38,736	12				
1926	377,[illegible].84											
Administration				62,[illegible]7	56,[illegible]97	90	6,276	10				
Personnel				206,500	185,931	90	20,569	10				
Public Relations				13,391	13,391	100	-	-				
Special Training				93,[illegible]7	74,150	80	18,537	20				
TOTAL				377,[illegible]	331,469	88	45,[illegible]7	12				
1927	356,[illegible].63											
Administration				62,[illegible]7	[illegible],[illegible]33		[illegible],[illegible]	10				
Personnel				[illegible],933	1[illegible],534	[illegible]	[illegible],[illegible]3	10				
Public Relations				15,[illegible]31	[illegible],[illegible]31	100	-	-				
Special Training				7[illegible],[illegible]68	[illegible],[illegible]1[illegible]	[illegible]	[illegible],[illegible]	[illegible]				
TOTAL				[illegible],[illegible]36	[illegible],[illegible]71	[illegible]	1,[illegible]07	12[illegible]				
1928	359,602.35											
Administration				[illegible],[illegible]07	[illegible],[illegible]07	[illegible]	[illegible],[illegible]	[illegible]				
Personnel				[illegible],137	1[illegible],[illegible]77	[illegible]	[illegible],[illegible]	10				
Public Relations				1[illegible],[illegible]	2[illegible],33	1[illegible]	-	-				
Special Training				77,560	[illegible],[illegible]68	80	1[illegible],512	[illegible]				
TOTAL				359,60[illegible]	[illegible],[illegible]70	[illegible]	[illegible],132	[illegible]				
1929	405,[illegible].13											
Administration				67,918	61,1[illegible]	[illegible]	[illegible],[illegible]	[illegible]10				
Personnel				281,1[illegible]3	303,[illegible]29	[illegible]90	[illegible]3,11[illegible]	10				
Public Relations				17,[illegible]63	17,[illegible]63	100	-	-				
Special Training				9,180	71,257	80	17,[illegible]23	20				
TOTAL				405,[illegible]33	367,705	[illegible]	[illegible]7,7[illegible]8	12				
1930	391,668.33											
Administration				[illegible],[illegible]32	[illegible],[illegible]35	[illegible]	[illegible],[illegible]07	1[illegible]				
Personnel				[illegible],[illegible]27	133,305	90	[illegible],[illegible]22	1[illegible]				
Public Relations				17,[illegible]33	17,[illegible]33	100	-	-				
Special Training				[illegible],[illegible]31	[illegible],[illegible]2[illegible]	80	1[illegible],307	[illegible]				
TOTAL				391,668	[illegible],[illegible]7[illegible]	88	[illegible],396	12				

1930						
Administration	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Personnel	[illegible]	130,205	90	[illegible]22	10	
Public Relations	17,[illegible]	17,[illegible]	100	-	-	
Special Training	[illegible]1,551	[illegible]	80	13,307	[illegible]	
TOTAL	391,668	[illegible]	83	[illegible],396	12	
1931						
Administration	68,884	61,996	90	6,888	10	
Personnel	145,474	130,926	90	14,548	10	
Public Relations	16,462	16,462	100	-	-	
Special Training	77,112	61,690	80	15,422	20	
TOTAL	307,932	271,074	88	36,858	12	

[fol. 3969] DEPOSITION EXHIBIT #194

2/11/32.

Distribution of Provisional Estimate—1932

Name	Complete Sets	Statements A	A-1	B	C	D	E
Mr. Gifford	x						
Mr. Gherardi	x						
Mr. Waterson	x						
Mr. Cooper*	x						
Mr. Heiss	x						
Mr. Saxton	x						
Mr. Hamilton	x						
Mr. Wlodeck	x						
Mr. Andrew	x						
Mr. Green	-	1	1	1	1	1	-
Mr. Wilkinson	-	5	5	5	4	-	7

*Returned for further use.

Index of Statements

A. Summary of Provisional Estimate and Forecast (Compared with Results of 1930-31).

A-1. Monthly Distribution of Provisional Estimate for First Four Months Year 1932.

B. Supplemental Data on Stations, Plant, Revenues and Expenses.

C. Estimated Plant and General Equipment Expenditures, 1932 to 1934 (Including Construction Work in Progress).

D. Estimate of Cash Requirements Year 19—.

E. Estimated Quantities of New Material Required to be delivered in 1932-33-34.

.00			326,135							
.04										
.00										
.00			198,536	258,829	80	39,707	20			
.00			20,405							
.00			37,722							
			394,210							
.38										
00										
00			229,200	183,300	80		20			
00			21,200							
00			27,547							
			420,568							

[fol. 3970] DEPOSITION EXHIBIT #195

Statement of Number of Employees of Bell System, Being A. T. & T. and Associated Companies and Western Electric, Bell Telephone Laboratories and 195 Broadway Corporation

American Telephone and Telegraph Company

Number of Employees

	Associated Companies	Long Lines Department	General Department	(a) Western Electric Co., Inc.	Bell Tel. Laboratories Inc.	(b) 195 Broadway Corp.
December 31, 1923	259,760	10,382	1,837	63,808	.....	440
December 31, 1924	268,054	9,605	1,992	49,157	.....	447
December 31, 1925	281,104	9,894	2,097	39,460	3,468	443
December 31, 1926	285,749	12,631	2,248	45,110	3,640	470
December 31, 1927	293,393	13,228	2,290	41,138	3,881	476
December 31, 1928	314,307	17,651	2,377	57,493	4,444	482
December 31, 1929	338,875	22,593	2,577	37,254	5,628	496
December 31, 1930	301,891	19,775	2,677	66,274	5,864	512
December 31, 1931	276,796	15,431	2,539	(c)45,919	(c)5,472	487

(a) Includes Electrical Research Products Incorporated.
(b) Includes 205 Broadway Corporation prior to 1931.
(c) November 30, 1931.

[fol. 3971] DEPOSITION EXHIBIT #196

Statement Furnished by Mr. Folk Entitled "A. T. & T. Co., Patent Purchases ($1,000 or More) Other Than from Western Electric Company, 1909 to 1930, Inclusive"

Year	Purchased from		Amount
1909	None		
1910	None		
1911	A. C. Crehore		$5,000.00
	R. S. Donaldson		2,000.00
	Total		$7,000.00
1912	None		
1913	John Stoné Stone		$2,500.00
	W. T. P. Hollingsworth		40,639.42
	Albert L. Register		11,000.00
	Peter Cooper Hewitt		100,000.00
	Total		$154,139.42
1914	John Abbott, Trustee		$2,500.00
	James B. Speed		2,612.60
	Total		$5,112.60
1915	Sydney Hand Browne		$5,000.00
1916	F. R. Parker	(a)	$7,000.00
	George P. Mundy		2,000.00
	John A. McCoy		2,500.00
	Herzog Telephone Systems Co.		29,000.00
	Elwood Grissinger		500,000.00
	Total		$540,500.00

1917	A. L. Register		$2,000.00
	Oliver H. Tracy		15,000.00
	Total		$17,000.00
1918	Fritz Lowenstein		$150,000.00
	Oliver H. Tracy		10,000.00
	C. D. Ehret		5,000.00
	Total		$165,000.00
1919	Atlantic Communication Co.		$100,000.00
	Albert V. T. Day	(b)	18,000.00
	Vreeland Apparatus Co.	(c)	20,000.00
	Total		$138,000.00
1920	Albert V. T. Day	(b)	$18,000.00
	C. D. Ehret		5,000.00
	Vreeland Apparatus Co.	(c)	15,000.00
	Universal Machine Company		75,000.00
	John Stone Stone		7,500.00
	Total		$120,500.00

[fol. 3972]

1921	Albert V. T. Day	(b)	$18,000.00
	Bankers Trust Company of New York (Lucien Levy application)		20,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Loren S. Wells		1,000.00
	Total		$54,000.00
1922	Albert V. T. Day	(b)	$18,000.00
	J. B. Russell		50,000.00
	Major General George O. Squier		75,000.00
	Westinghouse Electric and Manufacturing Company	(d)	45,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Total		$203,000.00
1923	Albert V. T. Day	(b)	$18,000.00
	Chisholm Development Company		7,500.00
	Daniel M. Therrell		5,000.00
	Radio Corporation of America		100,000.00
	Estate of Charles D. Lanning		5,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Westinghouse Electric and Manufacturing Company	(d)	28,333.33
	Total		$178,833.33
1924	Albert V. T. Day	(d)	$18,000.00
	Hugo Lieber		15,000.00
	David G. McCaa		10,000.00
	Marius Latour		100,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Clarence A. Anderson		12,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.33
	Johannes H. Cuntz		5,000.00
	Total		$183,333.33

1925	Albert V. T. Day	(b)	$18,000.00
	J. H. Cuntz		45,000.00
	Mihran M. Dolmage		30,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.33
	Allgemeine Elektricitats—Gesellschaft		1,193.75
	Total		$117,527.08
1926	Albert V. T. Day	(b)	$18,000.00
	Francis W. Dunmore		1,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.34
	Total		$27,333.34

[fol. 3973]

1927	Albert V. T. Day	(b)	$18,000.00
	Westinghouse Electric and Manufacturing Company	(d)	16,666.67
	G. W. Stewart		25,000.00
	Total		$59,666.67
1928	Albert V. T. Day	(b)	$18,000.00
	G. W. Stewart		25,000.00
	Westinghouse Electric and Manufacturing Company	(d)	13,333.34
	William M. Bruce, Jr.		1,000.00
	General Electric Company (Fessenden)		100,000.00
	Hazeltine Corporation		45,000.00
	Total		$202,333.34
1929	Radio Corporation of America		$10,000.00
	Westinghouse Electric and Manufacturing Company	(d)	10,833.34
	C. Lorenz Aktiengesellschaft		4,000.00
	Total		$24,833.34
1930	H. M. Friendly	(a)	$150,000.00
	Hazeltine Corporation		45,000.00
	Frank G. Beetem		6,000.00
	John Poole		1,000.00
	Radio Corporation of America		25,000.00
	Total		$227,000.00

(a) This Company's proportion of total payment of $34,290 made through Western Electric Company.
(b) Installment on total payment of $180,000.00.
(c) Installment on total payment of $110,000.00.
(d) Payment under Armstrong—Pupin patents.
(e) This Company's proportion of total payment of $700,000 to H. M. Friendly made through Western Electric Company.

NOTE.—Payments listed above are shown gross. No allowance is made for any reimbursements from Western Electric Company is respect of certain items.

1925 Total shown does not reflect *receipt* of $25,000 from Westinghouse Electric and Manufacturing Company for Russell Option under Armstrong patent (Credited patent expense).*

1928 Total shown does not include payment of $27,274 to Bell Telephone Company of Pa. (System Company) for Cunningham Solder-Wiping Machine Assignment.*

* Red.

[fol. 3974] DEPOSITION EXHIBIT #197

Statement Referred to by Mr. Folk, Entitled "A. T. & T. Company, Patents Purchased from and Licenses Sold to Western Electric Company, Inc., by A. T. & T. Co. and Accounting Disposition, Years 1909 to 1930"

	Patents Purchased Annually Charged To		Licenses Sold Annually Credited To		
Year	General Expense	Total	General Expense	Other Income (Acct. 316)	Total
1909	$.....	$.....	$.....	$.....	$.....
1910	.....	.....	.....	.....	.....
1911	800	800	2,002	.....	2,002
1912	.....	.....	.....	.....	.....
1913	(a)65,000	(a)65,000	.....	.....	.....
1914	(a)105,955	(a)105,955	9,585	.....	9,585
1915	475	475	.....	.....	.....
1916	.....	(b)	.....	.....	.....
1917	(a)279,630	(a)279,630	(c)33,448	.....	(c)33,448
1918	.....	.....	.....	.....	.....
1919	32,925	32,925	5,300	.....	5,300
1920	16,675	16,675	5,150	.....	5,150
1921	12,416	12,416	13,325	.....	13,325
1922	23,510	23,510	17,440	.....	17,440
1923	1,163	1,163	.....	.....	.....
1924	(d)43,826	(d)43,826	7,675	.....	7,675
1925	48,503	48,503	4,578	5,239	9,817
1926	51,804	51,804	.....	.....	.....
1927	94,326	94,326	.....	33,489	(e)33,489
1928	73,913	73,913	.....	16,250	(e)16,250
1929	85,568	85,568	.....	11,775	(e)(f)11,775
1930	(g)71,026	(g)71,026	.....	20,000	(e)20,000
	$1,007,515	$1,007,515	$98,503	$86,753	$185,256
1931	.....	.....	55,424	.....	(e)55,424
			$153,927	$86,753	$240,680

For Notes, See Sheet 2.

[fol. 3975]

(a) Includes payments for De Forest patents:

1913	$ 65,000
1914	100,000
1917	250,000

(b) Does not include $7,000 paid through Western Electric Company to F. R. Parker.

(c) Includes $29,000 received from assignment to W. E. Co. of patents purchased from F. B. Herzog in 1916.

(d) Comprises 2 payments—

February, 1924	$43,501
October, 1924	325
	$43,826

(e) W. E. Co. accounts reflect these items in prior year by a reserve set up for licenses to be purchased from American Tel. and Tel. Co. in following year.

(f) Does not include $33,333.33 received from Western Electric Company representing that Company's proportion of total payment in 1928 of $100,000 made by American Telephone and Telegraph Company to General Electric Company on account of Fessenden patents.

(g) Does not include $150,000 paid through Western Electric Company to H. M. Friendly.

(Here follow side folios 3976–3979)

DEFENDANT'S EXHIBIT 198

Western Electric News
January 1929

The Bell System and Ourselves

Edgar S. Bloom, Our President, Traces the Development of the Telephone Art and Indicates the Growth of the Future

I HAVE been asked by the editors to write something about the place of the Western Electric Company in the Bell System. It has occurred to me that you might be interested in a survey of the beginnings and the up-building of the Bell System, which I gave to our guests from Baltimore and Chicago at a dinner in Chicago on November 16, 1928, following their visit to the Hawthorne Works. After some introductory remarks I spoke as follows:

I would like to carry you back fifty years and give you a brief picture of the plan followed in the development of telephone service in America, and the relation which the Western Electric Company bears to that development. There are two names which will always stand out in American telephone history, Alexander Graham Bell, the inventor of the telephone, and Theodore N. Vail, the organizer of the business, whose imagination pictured the future possibilities of the scientific toy of 1876 and visualized the business organization which would most effectively promote the widest and most useful development of telephone service in America.

Those of us who have been fortunate enough to have been associated with Mr. Vail will never cease to marvel at his vision and foresight; we love to pay tribute to him, to his imagination and to his wonderful ability which converted that imagination into a practical reality, serving today the business and social world as he, fifty years ago, conceived that it would.

Mr. Vail as general manager, became the business head of the Bell Telephone Company in June, 1878. Previous to that time he had been in the Railway Mail Service and resigned as General Superintendent of that service. Uncle Joe Cannon, who was so universally beloved by all Illinoisians, then a young member of Congress, who appreciated Mr. Vail's ability, was confounded by the news.

"Vail resigned his place," he exclaimed when they told him. "What for?" "Why he is going into that thing invented by Bell, the telephone that talks over a wire. He has invested some money in it and is going to make it his business." "Well," said Cannon, "that is too bad. I always liked Vail. Hubbard tried to sell me some of that stock. I am sorry he got hold of a nice fellow like Vail."

A Mr. Powell, who was then First Assistant Postmaster General, wrote Mr. Vail with much warmth regarding his resigning, as he expressed it—"To become superintendent or president of a company known as the Telephone Company," saying among other things:

"For T. N. V. to accept the superintendency of a Yankee notion in preference to the position he now holds is certainly laughable. I can scarce believe that a man of your sound judgment, one who holds an honorable and far more responsible position than any man under the postmaster general, with honor and respect attached to the same, should throw it up for a damned old Yankee notion (a piece of wire with two Texas steer horns attached to the ends, with an arrangement to make the concern blate like a calf) called a telephone. I feel confident that if you do make the change that in less than one year you will agree with me in saying that you made a mistake."

Referring to those early days of 50 years ago, Mr. Vail once said:—"At that time, few believed in the future of the telephone or its prospective value, and we had to interest people who, as a rule, had little money, but lots of imagination, enterprise and energy. When we started in, it was practically an unknown thing—an unknown field absolutely undeveloped. There was nothing in the world upon which to base an opinion. It was all imagination when the telephone first started."

At the start, Dr. Bell's fundamental patents on the telephone instruments covered practically the entire art of telephony. During the intervening years, every detail of the transmitter and receiver has been the subject of extended investigation and experimentation by the Research and Development Organizations of the Bell System, which has resulted in a large number of improvements. While many of these improvements were not patentable, there are at the present time 167 patents in effect covering various improvements, 60 patents are pending and 186 patents have expired, making a grand total of 413 patents to date covering various features of the transmitter and receiver. Since the invention of the telephone, there have already been in use 96 different types of transmitters and more than 64 different types of receivers, not including the present standard types now in use. These facts afford some indication of the vast amount of research and experimentation which has been involved in the development of our present day types of telephone instruments.

The development of the transmitter and receiver is merely an example of what has been going on during the past fifty years in the development of improved methods, materials and apparatus. It is this careful, patient, exhaustive work of research, investigation, experimentation, and development, undertaken in a small way at the inception of the business by a few engineers and scientists, which small group rapidly grew into a great organization, employing the best talent available

WHEN UNCLE JOE CANNON, at the time a young member of Congress, heard that Theodore N Vail had resigned as General Superintendent of Railway Mail Service, he exclaimed "What for?"

"Why, he is going into that thing invented by Bell, the telephone that talks over a wire. He has invested some money in it and is going to make it his business," he was told.

"Well," said Cannon, "that is too bad. I always liked Vail. Hubbard tried to sell me some of that stock. I am sorry he got hold of a nice fellow like Vail."

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and the most advanced methods, constantly pioneering and exploring; investigating things of great and large importance as well as those of minor and inconsiderable importance; which has resulted in the development of telephone service in America, to the high point of efficiency in which we find it today.

> MORE than twenty years ago Theodore N. Vail said: "The Bell System was founded on the broad lines of one system, one policy, universal service, on the idea that no aggregation of isolated, independent systems not under common control, however well built or equipped, could give the public the service that the interdependent, intercommunicating, universal system could give. This is no recent or new idea or theory; it is co-existent with the business. In fact the theory was evolved and developed before the business, and the business has been developed on that theory."

WHILE Dr. Bell's patents were of fundamental importance, the wonderful development of the telephone system in America is, in a large degree, due to Mr. Vail's vision as to the possibilities of the business as far back as 1878, and his clear conception of the plan which should be followed in the commercial development of the telephone system in America; or, as Mr. Vail expressed it over twenty years ago,

"The Bell System was founded on the broad lines of one system, one policy, universal service, on the idea that no aggregation of isolated, independent systems not under common control, however well built or equipped, could give the public the service that the interdependent, intercommunicating, universal system could give. This is no recent or new idea or theory: it is co-existent with the business. In fact the theory was evolved and developed before the business, and the business has been developed on that theory."

The development of this theory has resulted in:

1st—The formation of local companies throughout the United States in order to secure local interest and supervision, and to be certain that the use of the telephone would be developed to the greatest possible extent; these companies with their intimate knowledge of local conditions, considering and giving attention to the various needs of their respective communities, thus insure to those communities service and facilities to meet their particular conditions. In the early years there were many such companies, which later were merged and combined into larger companies, so that today there are seventeen so-called Bell System Associate or Operating Companies in the United States.

2nd—Construction and operation by the parent company of a system of long distance lines connecting the various local companies into a universal system, furnishing a comprehensive national service. In the early days there was, of course, no long distance service, but Mr. Vail was always a strong believer in the ultimate possibilities of such service. As early as 1879 he proposed a line between Boston and Providence, a distance of 41 miles. It was opposed by his associates as impracticable and was finally built by others. It proved to be a failure and as stated at the time, "They got nothing but noise out of the line." Later, through urging on the part of Mr. Vail, the line was taken over by the Bell Company, although at the time it was referred to as "Vail's folly." It had been built as a grounded circuit line, which seemed proper at the time. However, rapid strides were being made in the development of the telephone art, and it was suggested that the line be converted to a metallic circuit. This was done; the line worked successfully, and marked the beginning of long distance telephone service in America.

3rd—Formation of a general organization of the parent company over and above the local companies in order to secure uniformity in methods and apparatus and insure the development of a comprehensive system for giving a universal service. This general organization, with its broad view point would attend to the fundamental principles of the design of apparatus, application of new inventions, and all other questions of a fundamental nature, that could best be considered by one organization for the benefit of all.

IN the early days of the business, a number of widely scattered manufacturing concerns were licensed under the Bell patents. It was soon realized that it would be impossible to secure that close cooperation between those scattered manufacturers, and the parent company engineers, so essential to the development of standardized apparatus adapted to the needs of a national telephone system. Furthermore, there was danger of outside interests securing control of devices essential to the development of the business along broad lines. In any manufacturing business, much valuable auxiliary apparatus is developed from suggestions that are made in the course of manufacture, and almost at the outset it was clearly apparent that the manufacturing should be controlled through ownership in order that the Bell System might have the unrestricted use of all improvements and devices developed in the course of manufacture, and in order to direct development along standard lines in the interests of the Bell Companies, as distinguished from the selfish commercial interests of the manufacturer.

The predecessor of the Western Electric Company—the Western Electric Manufacturing Company—was organized in 1872, four years before the invention of the telephone, and was engaged exclusively in the manufacture of telegraph apparatus. That company began the manufacture of telephone apparatus in 1878, when the Western Union Telegraph Company went into the telephone business, and soon became the largest manufacturer of telephone apparatus, selling to the licensee companies of the Bell Company, in competition with its licensed manufacturers. By 1881 the Western Electric Manufacturing Company had the largest and best equipped factory for producing the type of apparatus required by the Telephone industry, and had developed certain lines of patented telephone apparatus, notably a multiple switchboard. The American Bell had also developed certain patented lines of apparatus but more in the nature of call bells and it was clearly apparent that the best switchboard business and the best call bell business should be brought together in order that

they might be developed in complete harmony. Accordingly, the Western Electric Company came into existence in 1882 as a reorganization of the Western Electric Manufacturing Company, and became the manufacturer of apparatus for the Bell System with the American Bell Company as the controlling stockholder.

This manufacturing arrangement made it possible to control the development of apparatus along standard lines through an intimate and harmonious working relationship between the engineers of the American and Western Electric Companies. Without such an arrangement every manufacturer and every telephone manager, if left to himself, would have started many different lines of development which would have resulted in many types and varieties of apparatus serving the same purpose, higher manufacturing costs and a wasteful, complicated situation from the standpoint of extensions, replacements and maintenance, and I hardly need suggest the great savings obtained through standardization, which makes possible the manufacture of a particular device in a large volume, as compared with manufacturing a multiplicity of types in much smaller quantities.

Happily, this has all been avoided. The American Company engineers, through close contact with the Associated Companies and continuous study of their operating problems, obtain the requirements of the business, and when they determine that a new device or improved type of apparatus is desirable the requirements are stated to the engineers of the Bell Telephone Laboratories, who endeavor to solve the problem of meeting those requirements with a practical piece of apparatus, satisfactory in design, workmanship and economy of use. When finally developed to meet these conditions, the American Company engineers recommend it as standard for use by the Telephone Companies of the Bell System.

DURING the year 1928 the Bell System will spend upwards of $425,000,000 for new construction, covering additions and betterments to meet the constantly increasing demands for additional service and for widening the scope and improving the quality of telephone service.

Throughout the Bell System, all new construction is carried on in accordance with a predetermined plan. Comprehensive studies are made, looking ahead twenty to thirty years, to determine the most economical plan for plant extensions to meet the estimated demands for service at the end of the period. This involves a complete detailed survey for each community, a study of the trend of population, the character of its business and residential areas, also the probable future changes in the character of those areas. Many other facts are gathered, which have a bearing on the growth and character of the community and the probable future demands for telephone service. On the basis of these facts and the conclusions drawn therefrom, a broad, general plan is prepared, covering the most economical type and location of central offices, conduit and cable lines, etc., which will meet the probable demands for service twenty to thirty years hence. These plans, which are known to us as fundamental plans, are restudied and revised, from time to time, to meet changing conditions which have not been foreseen, and all new construction is carried on in accordance therewith.

In August of each year the Operating Telephone Companies begin gathering the facts on which to base their budgets for the following year. By late fall, while the budgets are not complete, preliminary figures are available from which important conclusions may be drawn as to major changes in requirements, by general classes of materials and apparatus, as compared with the current year. These preliminary figures are summarized by the general staff of the American Telephone and Telegraph Company and any substantial changes in requirements are immediately brought to the attention of the Western Electric Company, in order that we may have ample time in which to plan for such readjustment of our manufacturing capacity as may be necessary. Should our studies indicate that any important readjustment will be necessary, the preliminary figures are rechecked in the light of the latest information available, and final action is taken when we are satisfied as to the reliability of our conclusions.

The final budgets of the Operating Companies are completed in December for the following year. We are immediately furnished with summaries on the basis of which our manufacturing program is planned in detail for the coming year, in anticipation of definite orders to be received later. In fact much of our product is scheduled from one to three years ahead, on the basis of preliminary forecasts and estimates, although firm orders are not placed until a long time thereafter. I hardly need suggest that this tentative scheduling ahead is of tremendous assistance to us in planning a smooth, steady manufacturing program; enabling us to reduce to a minimum, peaks and valleys in our output.

Furthermore, through the engineers of the American Telephone and Telegraph Company and the managers of our thirty-two distributing houses, located throughout the United States, who are in constant close touch with the Associated Operating Companies of the Bell System, we are promptly advised in detail of any variation in actual results as compared with budget predictions.

"WHY the need for the new plant in Baltimore?" asks Mr. Bloom in this article. And he answers his own question as follows: "I am reminded of one of the many stories of the small boy fishing on the Sabbath. This particular boy was fishing on Sunday afternoon and the minister, on his way to Sunday School, stopped and lectured him on the sinfulness of fishing on the Sabbath and, among other things, observed that it would undoubtedly lead to an association with fire and brimstone throughout eternity. The boy made no reply but kept on fishing and finally pulled in a good sized fish. He carefully removed the hook and, holding up the fish, said to the minister: 'If that d——d fish had kept his mouth shut he would not have gotten into trouble.'

"The American people love to talk even though it costs money to do so and, on the basis of our experience of a great many years, the more they talk the more they want to talk—provided it is made easy to do so and provided a satisfactory talk may be depended upon."

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As a result of this close relationship, we are also fully informed at all times as to the tendencies which make for an increase or decrease in the demands upon us, and are thus enabled to maintain without radical or revolutionary changes, a close adjustment of our manufacturing capacity to the requirements of the Bell System.

WHY the need for the new plant at Baltimore? In answering this question I am reminded of one of the many stories of the small boy fishing on the Sabbath. This particular boy was fishing on Sunday afternoon, and the minister on his way to Sunday School, stopped and lectured him on the sinfulness of fishing on the Sabbath, and among other things, observed that it would undoubtedly lead to an association with fire and brimstone throughout eternity. The boy made no reply, but kept on fishing and finally pulled in a good sized fish. He carefully removed the hook and holding up the fish, said to the minister:—"If that d——d fish had kept his mouth shut he would not have gotten into trouble."

The American People love to talk even though it costs money to do so, and on the basis of our experience of a great many years, the more they talk the more they want to talk; provided, it is made easy to do so; and provided, a satisfactory talk may be depended upon.

The Baltimore plant is required primarily for the manufacture of telephone wire and cable to meet the increasing demands of the American public for long distance telephone service.

Most of you will recall the great sleet storm which swept the Atlantic seaboard at the time of the Taft inaugural, on March 4, 1909, paralyzing the communications systems and leaving Washington cut off from the rest of the world. At that time our long distance telephone service was carried on principally over open wire circuits, on pole lines, which on the main routes carried 60 to 100 wires. While these heavy open wire structures were subject to serious damage and service interruptions from sleet and wind storms, it had not been possible up to that time, in the then state of the art, to carry on telephone conversations through cable for long distances. However, the art of transmission had been developing rapidly and following that storm intensive work was begun by the engineers of the Bell System, covering research and development, and the preparation of plans for the construction of a storm proof system of cables to connect Washington with the principal cities of the Atlantic seaboard, from Baltimore to Boston. This project involving the expenditure of many millions of dollars was rapidly pushed to completion.

Later developments in the transmission art made it possible to carry on telephone conversations through cable for even greater distances, and the extension of cables westward from the Atlantic seaboard was undertaken. By 1925 the long distance telephone cable system had reached Chicago, and now extends west to Davenport, Iowa, southwest to St. Louis, Missouri, and south to Greensboro, North Carolina, and it is planned within the next two years to extend the system westward to Omaha, Nebraska, and southward to Atlanta, Georgia.

These extensions of the long distance telephone cable system have been accompanied by marked improvements in the quality, dependability and speed of service. The improvement in the speed of service has been particularly marked; at the present time New York to Chicago calls, for example, are completed on the average in about four minutes, whereas, three years ago the average time of completion was about ten minutes. The public has been quick to respond to these improvements by an increased use of the service and substantial reductions in the rates during the past three years have further stimulated the use of the service. For example, in 1925 the basic day toll rate between New York and San Francisco was $16.50; it is now $9.00 and we are handling about three times as many messages between New York and the Pacific coast as in 1925. In 1925 the New York to Chicago rate was $4.65, today it is $3.25 and we are handling nearly three times as many New York-Chicago messages as in 1925.

It is this heavy increase in the use of long distance service that is primarily responsible for the new Baltimore plant and the initial factory unit, which we hope to have in operation by the end of 1929, will be devoted principally to the manufacture of telephone cable for long distance use. From time to time, additional manufacturing capacity will be provided at the Point Breeze plant, as required to meet the demands of the Bell System for Western Electric products.

GOVERNMENT INSURANCE PRIVILEGE FOR VETERANS EXTENDED

Under a recent amendment by Congress of the World War Veterans' Act of 1924, the privilege of obtaining United States Government Life Insurance has been extended indefinitely to ex-service men.

This makes it possible for any veteran of the World War, even tho he carried no War Time (renewable-term) insurance while in the service to apply for any of the various forms of policies offered in an amount not to exceed $10,000. The only restriction is that those who converted any part of their War Time (renewable-term) insurance to one of the permanent forms and later surrendered it for its cash value are eligible to apply only for the difference between the amount of insurance so surrendered and the maximum of $10,000.

Application blanks and a folder giving information and rates for the various forms of policies can be obtained from the American Legion Post and our insurance counsellors will be glad to render any assistance necessary in applying for this insurance.

W. A. SCHNEDLER.

[fol. 3980] DEP. EX. 200

Article in Western Electric News, Issue of June, 1914, Entitled "The Engineering Department of the Western Electric Co.", by F. B. Jewett

Most of us know that the Engineering Department is an integral part of the Western Electric organization with duties and responsibilities in some way related to those of the other departments and to the other parts of the Bell System. Except, however, for those whose work brings them in more or less intimate contact with the engineers, there seems to be considerable uncertainty as to just how the Engineering Department's activities fit in with the work of the other departments.

The organization chart, even with the help of the defined duties of the Chief Engineer and his department, is not sufficient to entirely clear up the matter unless one is already somewhat acquainted with the details of the department's varied activities. At the same time the expressed duties of the Chief Engineer are a concise statement which defines that part of the Company's business for which the Engineering Department is responsible. These duties are as follows:

1. He has charge of the Engineering Department.

A. It conducts the Company's experimental and development work.

B. It prepares specifications and drawings for all central office telephone equipments.

C. It prepares inspection specifications for and inspects:

(a) Material manufactured by the Company.

(b) Material furnished but not manufactured by the Company.

D. It is responsible for the design of all apparatus manufactured by the Company.

E. It investigates all complaints with reference to quality of apparatus and determines the responsibility for defective material furnished by Company.

In a word, the Engineering Department is that part of our organization where the apparatus which the Company

sells, or desires to sell, is designed and tested out before being turned over to the Shop to manufacture. But the work of the engineers does not end when a new design has been sent to the Manufacturing Department, as it is their further duty to make sure that the finished product meets the customer's requirements and the high standard of quality for which the Western Electric Company is noted throughout the world. This means that the Engineering Department must inspect sufficient of the Shop output or of the material in Merchandise stock to make sure that through some oversight fundamental errors in structure or packing have not crept in.

From the development and design of apparatus to be manufactured by our Shop and the preparation of suitable manufacturing and inspection requirements, it is, of course, but a logical step to the design, specification and inspection of the vast amount of material which the Western Electric Company, in its capacity of Purchasing Agent for the Bell companies, buys from outside manufacturers and suppliers. Being a logical step, this work also falls to the lot of the Engineering Department.

To perform its assigned duties properly the Engineering Department must work in close co-operation with the Engineering Department of the American Telephone & Telegraph Company and with the Patent, Sales, Manufacturing and General Purchasing Departments of the Western Electric Company.

As the defined duties of the Chief Engineer indicate, all of the department's functions are under the general supervision of the Chief Engineer, Mr. Scribner. But while [fol. 3981] responsibility for the work and the general conduct of the department is lodged in the Chief Engineer, the problem of detailed supervision is, of course, too great for any single man to handle, and for purposes of administration the immediate direction of the department is assigned to two Assistant Chief Engineers reporting to Mr. Scribner. Each of these assistants is responsible for certain phases of the work. In turn each of the Assistant Chief Engineers has a limited number of subordinates in charge of branches reporting to him. At the present time nearly eleven hundred people are required to handle the work of the department.

Roughly, this work can be divided under the following general classifications:

1. Development, including both telephone and telegraph apparatus and systems.
2. Fundamental research.
3. Transmission.
4. Equipment engineering.
5. Inspection.
6. Clerical.

In the division of the work for purposes of supervision it has been found desirable to make one of the Assistant Chief Engineers, Mr. McQuarrie, responsible for the equipment engineering, the inspection, the clerical work and that part of the development work which pertains to automatic and semi-automatic telephone systems and to high speed and printing telegraph systems. To the other Assistant Chief Engineer, Mr. Jewett, has been assigned the responsibility of directing the department's work in fundamental research, in the development of transmission apparatus and the solution of transmission problems, and for that part of the development work connected with the design of general telephone apparatus, of the so-called manual systems and of the other types of apparatus which the Company makes and sells. He is also responsible for the chemical research work.

Reporting to Mr. McQuarrie are Mr. J. Danher, in charge of the Equipment Branch; Mr. A. F. Dixon, in charge of the Telegraph Development Branch; Mr. C. F. Baldwin, in charge of the Automatic Development Branch; Mr. A. H. Vorum, in charge of the Inspection Branch; Mr. J. W. Roberts, the Chief Clerk; and Messrs. J. H. Bell, H. P. Clausen, A. H. Dyson, P. M. Rainey, and R. Raymond, who form a Special Study Group. Those who report to Mr. Jewett are Mr. E. B. Craft, in charge of the Development Branch; Mr. J. W. Harris, in charge of the Chemical Research Branch; Mr. E. H. Colpitts, in charge of the Research Branch; and Mr. R. L. Jones, in charge of the Transmission Branch. With the exception of the equipment engineering work, all of which is at Hawthorne, and a part of the Inspection Branch, the Hawthorne Apparatus Divi-

sion, and the major part of the Cable Division of the Development Branch which are also at Hawthorne, all of the engineering work is performed in New York.

In order that there may be a clear appreciation of the Engineering Department's place in the organization, it will be interesting to explain briefly the general scope of the work done in the above sub-divisions of the department. Before considering the functions of the various branches, however, let us first see where the Engineering Department's work originates.

As the principal business of the Western Electric Company is in manufacturing and supplying apparatus to the telephone companies of the Bell System, so, naturally, the principal work of the Engineering Department is concerned with problems relating directly to the needs of the Bell companies. These may be either development or research problems connected with new service requirements, the betterment of existing apparatus or systems, or they may be equipment engineering problems connected with the manufacture and installation of new central offices. Of the research, transmission and general development problems a large part reach the Engineering Department from the Engineering Department of the American Telephone & Telegraph Company and represent advances in the art of telephony brought about by the studies of field requirements which that central engineering department is making at all times. Another large portion of the problems arise directly from the work and developments in the Engineering Department itself, while a third portion arise from cost studies and the needs of the Purchasing Department in [fol. 3982] connection with the handling of outside supplies for the Bell companies.

Second only to the work on apparatus and problems for the Bell companies is the volume of work which the Engineering Department is called upon to do for the Sales Department in connection with the Company's general business in telephone and other apparatus. Associated with this is a vast amount of work for the Export Department and allied houses throughout the world.

Having seen where the problems originate, let us consider somewhat the work of one or two of the main subdivisions of the department. As an illustration, let us follow a new development through the Engineering Depart-

ment, taking for example, the case of a problem involving new circuit, transmission and apparatus features arising from some need in the operating field. This sort of problem is usually presented to us by the Engineering Department of the American Telephone & Telegraph Company, although similar problems reach us from the Sales Department. In either case the service requirements have been studied and the Engineering Department is informed in a general, and wherever possible in a specific way, approximately what must be accomplished.

As the problem chosen involves circuits, it will probably go first to the Circuit Laboratory, where it will be studied and a tentative layout, to give the required operating features, made. This layout will be on the assumption that apparatus having certain desired characteristics can be developed. When this is completed the various other departments take up their work—the Apparatus Design Division if new mechanical apparatus is required, and the Physical Laboratory if cords, coils, etc., are needed. Somewhere in the course of the development the Chemical Laboratory is almost certain to be involved, either in connection with materials or finishes.

After a time, each branch will have completed its portion of the work and the result will be something which supposedly meets the requirements. With an assembly of preliminary apparatus, tests for operation are made and the Transmission Laboratory investigates the arrangement, to determine its efficiency in the talking circuit. If the arrangement passes these examinations, final models in finished form are made up and subjected to exhaustive electrical and mechanical tests in the Physical Laboratory.

When those responsible for the problem are satisfied that apparatus conforming to the models will probably be satisfactory, the matter is ready for discussion with the Shop, to make certain that the designed apparatus can be manufactured commercially and also to obtain cost figures for it. After this comes the final consideration with the American Telephone & Telegraph engineers or the Sales Department, and if at the end of the discussion the matter still appears favorable, manufacturing information is placed in the Shop and an equipment, built from tools and under normal Shop

conditions, is made up and installed for service trial. This service trial is under the direct supervision of the American Telephone & Telegraph and Western Electric engineers and is designed, not only to make sure that no service conditions have been overlooked, but also to develop any points of mechanical weakness which may not have been discovered in the preliminary laboratory tests.

Finally, and after it has been shown with reasonable certainty that the commercial apparatus will be satisfactory, revised manufacturing information is given the Shop and the work of the Engineering Department is finished, so far as development is concerned. There yet remains, however, the work of the Inspection Branch, who must see to it that as finally sent out to the customers the apparatus is generally satisfactory in every respect.

The foregoing is a brief description of the way in which the development problems are handled, and exemplifies the care which is given to the design of the apparatus which the Company manufactures. If the problem had been one involving a new type of cable, special transmitting apparatus, or a high speed telegraph system, fewer departments might have been involved, but the general course of the work would have been the same.

The largest single sub-division of the Engineering Department is the Equipment Branch at Hawthorne. The primary function of this branch is to edit the orders for telephone central office equipments as they are received from the customers and prepare the information required by the Manufacturing Department for the construction and installation of the necessary apparatus. The problems of this branch consequently arise mainly on account of specific orders received from the various telephone companies. In addition to the regular editing work, this branch is responsible for the design of new type switch-board sections, as they may be made necessary by changed service requirements. In conjunction with the Engineering Departments of the American Telephone & Telegraph and Associated Companies, the Equipment Engineering Branch has also for some time been engaged on the problems of standardizing central office equipments. The great value of this standardizing work is becoming apparent in the simplification of requirements and the economies which result therefrom.

When describing the course of a development problem through the Engineering Department, mention was made of the Inspection Branch. The activities of this branch are not confined to the product of the factory at Hawthorne but are very largely concerned with the purchase of material manufactured by outside concerns, and in particular with [fol. 3983] the supply of pole line material and rubber insulated wire. In the performance of these duties, representatives of the Inspection Branch are scattered throughout the country and are responsible for seeing that the material purchased by the Company for its customers is in strict accordance with the specifications of the Engineering Department.

Most of the branches of the Engineering Department are, as their names indicate, engaged on specific phases of the engineering work—phases in which the art of telephony and telegraphy is being developed largely through the application of physical principles and engineering rules already known. There is one branch, however, whose functions are somewhat different from those of the other divisions, namely, the Research Branch.

Some years ago it became evident that while great advances were being made in the art of telephony, there was a certain class of problems which required a rather different treatment than was being accorded to most of the work, and that for their solution it would be necessary to [redacted] men with a somewhat different training than that [redacted] engineers engaged on specific developments. The [redacted] was the formation of a Research Department for the study of the fundamental phenomena underlying the art of speech transmission. This department aims not at the development of specific pieces of apparatus, but at the accumulation, by fundamental research, of the data needed by other branches of the Engineering Department in the performance of their duties. With this object in mind, the members of the Research Branch have been selected largely from men who have had advanced training in physics and physical research and who are particularly competent to make available for our use the results of the wonderful developments in physical science during the last few years.

In concluding this brief statement of the constitution and functions of the Engineering Department, it should be remarked that in the design and development of its appara-

tus, in the rigid engineering inspection of its product and the product of others which it sells, and in the far-sighted policy of fundamental research which it is pursuing, the Western Electric Company is in the very forefront of the manufacturing organizations of the world. In fact, it is very doubtful whether there is another large manufacturing organization, in any line whatever, which exercises as much engineering care and supervision in the development and manufacture of its product as does the Western Electric Company.

[fol. 3984] DEPOSITION EXHIBIT #201

Article in the Bell Telephone Quarterly, Issue of January, 1929, Pages 9 to 24, by H. S. Osborne

Standardization in the Bell System

In connection with a comprehensive study of industrial standardization, the National Industrial Conference Board recently requested a description of the processes of standardization in the Bell System and the results obtained.

Such a description, of course, bears upon the activities of all parts of the Bell System and therefore a statement was prepared through the co-operation of representatives of the various general departments of the American Telephone and Telegraph Company, the Bell Telephone Laboratories, and the Western Electric Company.

With the permission of the National Industrial Conference Board the substance of the paper thus prepared will be published in the Bell Telephone Quarterly. The first part is given below and the rest will follow in a later issue.

In view of the large number of people who assisted in the preparation of this statement it is hardly practicable to make specific acknowledgment to all contributors, but the undersigned, who acted as editor, wishes to acknowledge particularly the co-operation of Mr. S. P. Grace, Bell Telephone Laboratories; Mr. T. K. Stevenson and Mr. F. Clark, Western Electric Company; and Mr. F. L. Rhodes, Develop-
[fol. 3985] ment and Research Department, American Telephone and Telegraph Company.

H. S. Osborne.

General Statement

The ideal and aim of the Bell System, as regards telephone service, is "A telephone service for the nation, so far

as humanly possible free from imperfections, errors or delays, and enabling at all times anyone to pick up a telephone and talk to anyone else anywhere else, clearly, quickly and at a reasonable cost".

In order that it may most effectively work toward this ideal, the Bell System has been organized to do practically everything connected with giving such a telephone service, from the purchase of raw materials to the actual rendering of the service. Through the various companies and departments which constitute the System it does fundamental research work, investigates operating problems and develops operating methods, designs new apparatus to take advantage of the results of the research work and investigations, manufactures the apparatus in quantity, installs it as needed to meet service requirements, and operates and gives service with the plant so provided, using the methods so developed.

With this organization it is, of course, obvious that with far-sighted management the Bell System should seek to make the greatest possible use of standards for its plant and practices, and should seek also to have the number of different standards as small as is consistent with meeting adequately the service requirements of the System, in order to obtain the advantages in both service and economy which result. Standardization is therefore one of the firm bases on which the Bell System is built and is to a large extent responsible for the results which have been obtained.

Standardization in the Bell System is more than a means of obtaining economy and efficiency. It is essential to the best service and the most rapid progress. Standards are [fol. 3986] developed as the result of the accumulated experience of the operating companies and of the work of several thousand people at headquarters whose entire time is devoted to improvements. The results of the analysis of the operating experience and of the general investigations, researches, developments and designs of the headquarters groups, crystallized in the form of operating practices, methods, types of apparatus and of communication systems, are made available at once to the operating telephone companies of the System throughout the country, with information regarding their desirable field of use. These types of apparatus, communication systems, methods and practices thereby become standards for the Bell System by virtue of the fact that they represent the outcome of ade-

quate studies of the best way to meet a type of situation, and as such they are adopted by the operating companies and put into use to the extent that they are needed under the different conditions of different companies. In some cases the new standards as developed cover a new field of operating requirements or present the means for doing something which could not be done before. In many cases the new standards replace existing standards due to advances in the art, improvements in technique or changes in operating requirements. Standardization is therefore not a static thing but is dynamic, involving a continuous procession of new standards to meet new conditions or to meet old conditions better than was heretofore possible, and the consequent dropping of old standards.

In the Bell System the standardizing functions are distributed through various companies and departments.

[fol. 3987] The headquarters' forces, consisting of the general departments of the A. T. & T. Co. and the Bell Telephone Laboratories, are as noted above devoted to working out and standardizing improvements in telephone plants, methods, and operating practices covering the entire field of telephone work. This includes fundamental research work, the development, design and specification of apparatus and of systems of communication, the development of standard methods of test, construction and maintenance practices, methods of handling telephone traffic, business methods and provisions for safety and health.

The Western Electric Company, which manufactures, purchases, and distributes for the Bell System, is, of course, very much concerned with standarization. A great deal of its manufacturing work consists in the quantity production of standardized products, and this facilitates the use of standardized manufacturing processes. In the stocking and distribution of apparatus and materials, standardized methods have been highly developed. This is also true in the installation of central office equipment, which is largely carried out by the Western Electric Company.

The telephone plant throughout the country is operated by a group of 24 Associated Operating Companies. Through the close co-operation between these companies and the headquarters' forces, full advantage is taken of their field experience in the determination and standardization of the best methods and practices in all matters bear-

ing on the quality of the telephone service, including the design, construction and operation of plant, business methods and provisions for safety and for the health of employees. [fol. 3988] To a large extent the standardizing work of the Bell System deals with matters peculiar to its own problems and is carried on within the System. The various parts of the Bell System are, however, taking very active part in cooperation with numerous national organizations engaged in standarizing work, in the development of standards which have a broader application than within the Bell System itself.

The various activities indicated in the foregoing are briefly discussed in the following pages.

Standardization in the Design of Telephone Plant

The nature of the telephone business is such that the telephone system offers a very good example of the advantages of standardization of plant and equipment. Telephone plant installed everywhere throughout the country must be such as to give satisfactory service when operated in connection with apparatus in any other part of the country. The plant of the telephone system is necessarily very complex in view of the complicated technical functions which it must successfully perform, the intricacy of the switching operations required for the rapid establishment of a connection between any two telephones in the country, and the complexity of the electrical transformations necessary to transmit and reproduce speech clearly between these telephones.

The complexity of the telephone plant and the number of types of apparatus and material which would be required would be very greatly multiplied if there were not a high degree of standardization for all parts of the telephone plant. In fact, it is not an exaggeration to say that the telephone service of today could not be given without this high degree of standardization.

As a result of standardization the telephone plant includes a very large number of identical units of apparatus. [fol. 3989] This, of course, has numerous advantages. The use of very large numbers of standard types of apparatus, circuits and equipment results in large economies in production. For example, about 1,500,000 receivers and 1,500,000 telephone transmitters, each of a single type, are pro-

duced in a year. Also, about 2,500,000 relays of the "E" type, differing only in the details of assembly of standard piece parts, are produced annually, and of these about 239,000 are of one code number and 232,000 of another code number, the relays of a given code number being identical. Without standardization these same quantities would be distributed between a large number of different types with correspondingly greater costs. The advantages of using in the telephone plant large numbers of identical pieces of apparatus, of course, extend beyond production and include able to manual and more favorable to dial operation.

In all standardization of apparatus, interchangeability has always been a prime consideration. This is important from the standpoint of dimensions; for example, transmitters are so designed as to fit into any mounting even though made a good many years apart. In a broader sense, considerations of interchangeability lead to the design of new standards in such a way as to fit into existing plant with the minimum possible change in the other items of the plant. This is of greater importance, for example, in the design of new circuits which must function properly with existing telephone plants both in the transmission of speech and in the operation of signals associated with the switching equipment.

In view of the large degree of standardization of the present telephone plant, the standardization work does not consist primarily in the simplification of present practices [fol. 3990] but to a large extent in the development of new standard apparatus or materials to replace or supplement existing standards.

These new standards may have their origin in the development of new operating requirements or conditions, which are continuously reviewed by the studies of the general departments of the A. T. & T. Company in co-operation with the operating companies. An illustration of this type of origin is given by dial switching equipment for very large cities, the development of which was undertaken as the result of fundamental studies showing that the conditions in large cities are becoming progressively less favorable to manual and more favorable to dial operation.

Or the new standards may develop into an invention or a group of inventions. An example of this is a group of inventions bearing on the increase in range of telephone transmission, which opened the way to the clear transmis-

sion of speech over very long cable circuits free from interruption by storm whereas previously the voice transmission was possible through cable only over relatively short distances. This is resulting in the rapid development of a nation-wide system of toll cables to a large extent replacing for new work the previous types of toll circuits.

Again the new standards may arise from the results of fundamental research work making possible new kinds of apparatus or developing new types of materials as illustrated by the development of permalloy, a new alloy having very extraordinary magnetic properties. This new material has been applied in the design of inductance coils and of relays which can thus be made with a relatively small amount of magnetic material giving lower cost or with improved operating characteristics.

[fol. 3991] In any of these cases standardization is the final step in the process of development which is carried out by the headquarters departments, including the general departments of the American Telephone and Telegraph Company and the Bell Telephone Laboratories. The development is based upon studies of the needs of the operating companies and investigations of the possibilities of new inventions, and it results in the complete specification of the new type of apparatus or system of communication designed to best meet the end in view.

The proposed new standards are not only carefully scrutinized as to design, but are given extensive laboratory tests, and most often, in addition, trials under actual service conditions, before being standardized. With satisfactory results from these trials the apparatus is standardized by the A. T. & T. Co. and general information regarding it and its field of use issued to all of the Associated Companies. The new standard is thereupon adopted by each Associated Company for use to the extent that conditions in its territory present a proper field for its use.

Concurrent with the standardization of the new type of apparatus, the Bell Telephone Laboratories provide to the Western Electric Company standard specifications covering the description and performance of the apparatus, including manufacturing tests and inspections. It is the purpose of these specifications to give adequate information to the manufacturer regarding the device and regarding the performance requirements which it must meet when

completed, but not to specify in detail the process of manufacture. This is done by the manufacturing organization itself, which standardizes for each type of apparatus the methods to be followed in its production.

[fol. 3992] A great deal of attention has been given to the design of apparatus in such a way that a single piece part can be used in a large number of different apparatus units. By this means, engineering and production costs are greatly reduced through the reduction in the number of parts and the resulting large quantity production of as few standardized parts as possible.

One interesting example of this standardization of piece parts is in connection with keys, that is, hand operated switches. Keys are used in connection with telephone switchboards in large quantities and are required to perform a very wide variety of switching functions. This leads to the necessity for a large number of different types of keys. However, these keys have been so designed that certain parts are used interchangeably in many different types of keys. Because of this fact, production of such parts is very high and the keys themselves can be manufactured on an economical basis even though the demand for some particular combinations of parts may be small. A similar illustration is given in the design of relays, which are electrically operated switches.

A great deal has been accomplished in the standardization of the technical information about new apparatus standards. Drawings, for example, covering standardized equipment or apparatus are made up in the standard size and form. It has been found that 13 sizes are sufficient to meet the requirements of all but the most unusual situations.

Not only are the drawings standard in size and form, but it is found possible to use identically the same drawing in different parts of the organization, thus avoiding duplication of effort. Drawings covering the design of new apparatus made up by the Laboratories are sent to the Western Electric Company or other manufacturers involved and [fol. 3993] where applicable used by them for manufacture. These same drawings are furnished to the Associated Companies to inform them of the newly standardized apparatus and used by these companies in their technical work.

In connection with the standard drawings very large savings are made by the use of standard symbols representing pieces of telephone apparatus. These symbols — arranged in a drafting dictionary, known as the Circuit Convention Handbook, which is used by draftsmen and engineers in preparing circuit drawings. It contains conventional diagrams for all the standard types of apparatus now in use. Each of the conventions, of which there are thousands, is made up to indicate the essential functions of the piece of equipment as it affects the circuit, without showing the mechanics of the design of the apparatus involved. It also covers the abbreviations which are normally used on circuit drawings.

As an example of the effect of standardization in this particular, Figure 1 and 2 are of interest. Figure 1 is a draw-

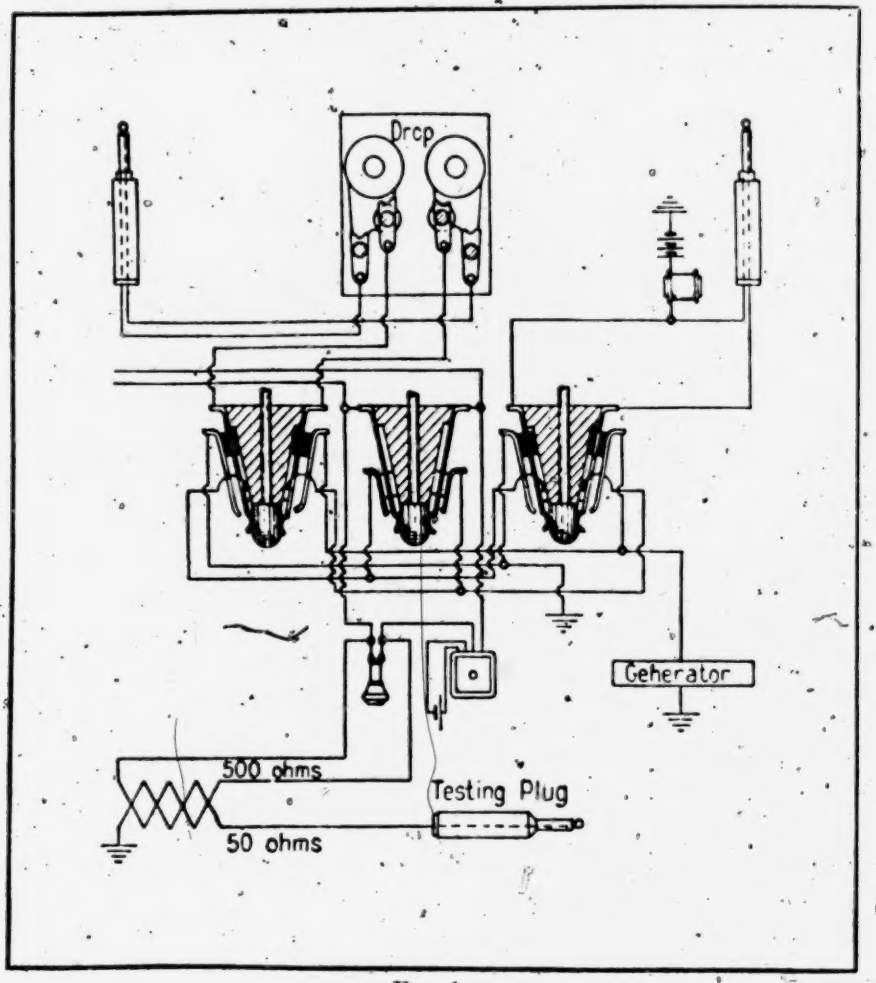


FIG. 1

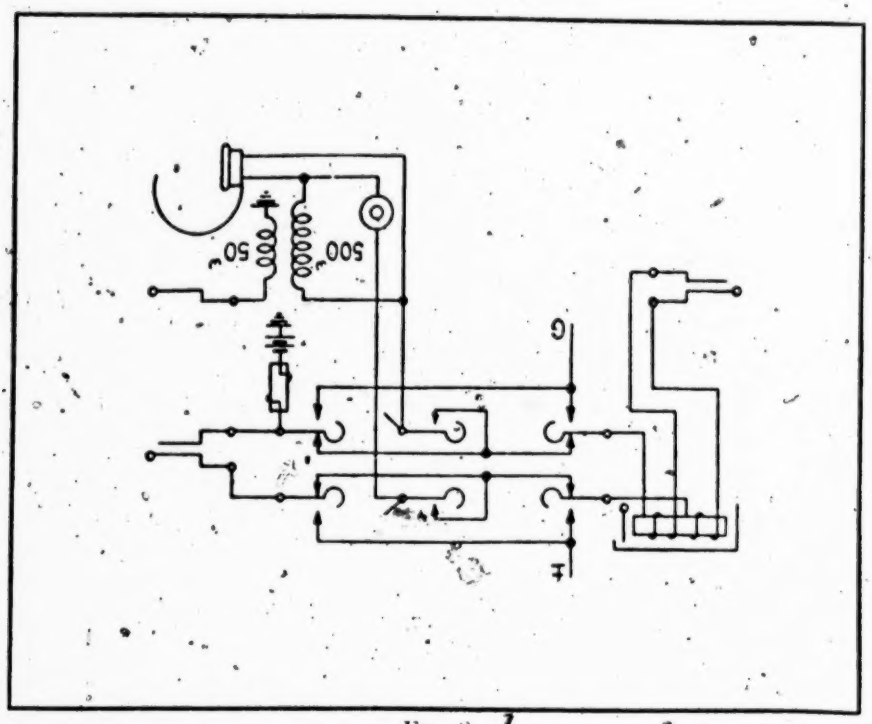


FIG. 2

ing of a simple cord circuit made in 1889. Figure 2 shows how the drawing of the same circuit would be made today. The great reduction in labor of drafting and much greater ease of interpretation of the drawing are evident.

Of the above conventions those which are in general use by all telephone manufacturers are in process of approval [fol. 3994] by the American Engineering Standards Committee as American standards, thus assuring uniformity of these conventions, not only within the Bell System but among telephone manufacturers outside the System as well.

The general plan outlined above for drawings is also used for the distribution of specifications for equipment design. Specifications prepared by the headquarters' forces are distributed to both the manufacturing and the operating branches of the organization. These specifica- [fol. 3995] tions are made uniform in style and size to facilitate their use and their filing.

Specific Examples of Standardization of Telephone Plant

It is, of course, impracticable within a limited space, to indicate all of the important items of standardization in

the telephone plant. However, in addition to the illustrations used in connection with the foregoing general discussion, a few of the most outstanding results are briefly outlined below.

In local manual switchboard equipments, it is found possible to meet the widely varied demands of the Bell System with only five standard types of switchboard, three designed for common battery offices and two for magneto offices. This means that while the actual amounts of equipment required naturally vary with the size and local conditions of the office, the switchboard in each case can be made [fol. 3996] up of assemblies of standard units corresponding to one of these five standard types.

In dial equipment the standardization is still greater. Here again there must, of course, be differences in the amount of equipment in different offices and also differences in certain items of the equipment. Beyond this, however, there are in use in the Bell System essentially only two different types of dial machine equipment. One, the panel type, is designed to meet the requirements for the larger cities, each of which has a relatively large number of offices which must be interconnected by means of the dial equipment. The other type of equipment, the step-by-step, is designed for use in the smaller cities and towns where a single office or a relatively small number of offices is adequate to provide present and prospective telephone service.

Apart from the telephone hand set which is just beginning to come into use, there are made for general use for subscribers only one type of receiver and one type of transmitter, although a small number of additional types are made for a fraction of a percent of special cases. These instruments, combined with associated ringing and auxiliary equipment, form telephone sets, some of which are desk stands and some of which are wall sets. It is found, however, that the needs of the country can be supplied with only 23 types of sets, including both those for use with dial and those for use with manual switching equipments, and including the arrangements necessitated by diffeent types of service, as individual line, two party, four party, coin box, etc.

[fol. 3997] In the installation of telephone sets on subscribers' premises, numerous requests are received for wiring plans by which telephones may be switched from one

line to another, special ringing arrangements may be provided, and extension stations may be associated with the line. The extent to which simplification in practice may be advantageous is illustrated by the results from a single operating company of a review some time ago of their wiring plans. In this one company it was found that whereas 540 different plans were in use, the requirements could be met by 28 standard plans, and of these 28, 16 took care of all but a few exceptional cases.

In the preservative treatment of poles, while a very large number of types of treatment have been experimented with, two types have been standardized for general use. One is an overall treatment for pine poles, which require treatment for the parts exposed to the air as well for the parts in the ground. The other is a single type of butt treatment for other woods such that preservative treatment of only the part of the pole which is in the ground is adequate.

With the exception of a few special cases, the requirements of the Bell System are met by two types of standard crossarms, one designed for poles carrying only telephone circuits and the other designed for poles carrying both telephone circuits and conductors of other wire using companies.

A large percentage of the conductors in the telephone system are in cables placed in underground conduit. It is found that approximately 90 percent of the conduit is properly covered by six different types of vitrified clay, differing only in the numbers of ducts which constitute the unit. [fol. 3998] There has been a high degree of standardization of the sizes of copper wire used for telephone conductors. 97 per cent of the open-wire (that is, wire strung on insulators) added to the plant at the present time is made up of three sizes, respectively, 104, 128 and 165 mils in diameter. Insulated wires in cables are also selected from a limited number of gauges. For example, long toll cables are made up practically entirely of two gauges, 16 and 19 B. & S. gauge. The cables for local distribution circuits are more than half of a single gauge, 24 B. & S., and about 95 percent are of one of three gauges, 24, 22 and 19 B. & S.

It has been possible to do a great deal in developing standards covering the best methods for the design and layout of telephone plant. A good example of this is given in the lay-

out and arrangement of telephone apparatus in central offices. It is necessary each year to build about a hundred telephone buildings to house additional equipment. While the external appearance of the building is adapted in each case to the neighborhood in which it is placed, the dimensions and general arrangement can in most cases best be determined by using one of a limited number of standard arrangements. This makes possible the use of standard assembled equipment units, of standard detailed floor plans and equipment engineering specifications and leads to economy and speed of construction. It also insures that carefully worked out arrangements, designed to give best operating results and provide greatest flexibility for future growth, are used for all cases in which they are suitable.

[fol. 3999] Another example of this type of standardization is presented by toll circuits. If each toll circuit were designed individually to meet exactly the requirements as regards efficiency for good transmission in the particular case, the result would be that in general each small group of toll circuits between two points would differ in design from every other group of toll circuits between any other two points. This would result in tens of thousands of different kinds of toll facilities, each designed for a specific use only and would result in endless confusion and lack of practicability. Instead of following this plan, the types of toll circuit for new construction are limited to a very small number including only three types for open wire circuits and from four to six types for toll cable circuits. In the design of any given circuit choice is made from this limited number of types of facilities, selecting one which combined with suitable apparatus will give not less than the required transmission efficiency in the given case. This results in great advantages in simplicity of plant design and in the flexibility with which facilities can be transferred from one use to another as occasion requires.

Other specific examples can be given but the above are sufficient to indicate the very important part which standardization plans in the design of telephone plant.

[fol. 4000] Standardization of Raw Materials

The production of standard products naturally requires the standardization of the raw materials entering into those products. There have, therefore, been developed a series

of specifications covering the standard requirements for raw materials purchased for the construction of telephone apparatus and also covering standard finishes for these materials as fabricated by the supplier.

An important example of the establishment of standards for raw material is the establishment of requirements for sheet brass of all tempers and thicknesses. This work has been extended to include nickel, silvers and bronze, covering altogether seven grades of metal. Work has recently been started on rod stock. All of this work is carried on co-operatively between Bell Laboratories, the Western Electric Company and the principal suppliers of raw material.

Standard requirements for materials, of course, depend upon the establishment of suitable standard methods of test to measure the quantities which are to be specified. The American Society for Testing Materials has done a very large amount of work in developing standard tests for materials and it has been the practice to adopt these standards of test whenever they serve the purpose. As the result, a large majority of the specifications for raw material contain reference to A. S. T. M. testing methods.

In addition, however, it has been necessary to take a very considerable amount of initiative in the development of standard testing methods. Wherever practicable this work has been done in co-operation with the A. S. T. M. and other interested organizations.

[fol. 4001] The question of hardness testing was given considerable study in connection with the work on brass and this has resulted in the adoption of standard tests for the Bell System which are now being studied by the A. S. T. M. Impact tests suitable for molded and sheet insulating materials have also been developed. Another interesting development is that of suitable tests for die castings, including tensile strength, elongation, hardness and impact strength. In developing standard methods of test for die castings, more than 55,000 specimens have been prepared to date and are being tested by the co-operating organizations.

Other standard methods of test developed through the Bell System which are of interest, are insulation resistance tests, high frequency tests and tests of insulating papers. In these tests and in others, the Bell System representa-

tives have co-operated with the A. S. T. M. and they have adopted as standard the methods developed.

The discussion of raw materials is a natural place in which to mention the standardization of methods of sampling although this applies to completed products as well as to raw materials. In many cases it is practicable to make the tests for the check of quality on only a fraction of the material supplied. In order to insure uniform and satisfactory results, it is necessary to have standard methods of sampling, including the determination of the size of the sample lots to be tested and the interpretation of the results of those tests as applying to the material as a whole.

[fol. 4002] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 202

Article in the Bell Telephone Quarterly, Issue of October, 1922, Pages 12 to 24, Inclusive, Entitled "Notes on Radio", by O. B. Blackwell

P. 22:

Broadcasting

A service for which radio, by its inherent nature, is particularly fitted, is that of broadcasting music, news, etc. to a large number of people who can listen to it by means of comparatively simple receiving sets. This type of system has become so thoroughly known as to require no explanation here. It is not a two-way service, and is not, therefore, of the same type as the usual telephone service. In this case the usual difficulties with radio of lack of secrecy and of spreading out over a large territory are the particular features fitting it for broadcasting economically over a wide area.

P. 23:

[fol. 4003] Telephone Service for Rural Communities

While, from the inherent nature of radio, it is entirely absurd to consider it for carrying on the usual telephone service in place of wire systems in districts which are well

developed in population, we have attempted to determine whether it could be developed to give telephone service at a sufficiently low cost to find a field in very sparsely settled country districts.

In this connection, it should be pointed out that radio is purely a method of transmission of messages. In giving telephone service, it is necessary that we not only have means of transmitting our messages, but also means of connecting the transmitting channels together, so that any two subscribers may be permitted to talk. This is the function of the central office, and of the operators who are employed there. Radio in no way avoids the necessity for this switching function. * * *

P. 24:

From the discussion which we have given it may be evident why it is that the development engineer has viewed radio with somewhat conflicting emotions. In perhaps no other part of the communication art have there been developed more beautiful technical methods of apparatus, or is there presented to him a more intensely interesting group of technical problems. It has opened up possibilities of giving new fields of telephone service, and the results which it has yielded and promises to yield in these fields appeal greatly to his imagination, as they do to that of the gen- [fol. 4004] eral public. Yet in perhaps no other field has the development engineer dealt necessarily with factors inherently so variable, or so little under his control, or has the development work yielded so little in results of practical commercial importance, as compared to the large expenditures made. Furthermore we know that to put radio telephony into such shape that it can give those services for which it is fitted will require that we continue intensive development for many years.

P. 25:

We have in mind, however, that with the constantly increasing demands for all types of communications the radio field, limited though it is in scope, may be expected to grow to considerable proportions. Furthermore we are watching with large interest the apparently great appeal of radio telephone broadcasting to the general public. As already noted, the difficulties of radio for ordinary telephone work, that is, the spreading out over wide territory and non-

secrecy are just the characteristics which are desirable in broadcasting. It may be that here there is a service in which radio telephony can assume considerable commercial importance, and much more than justify the large amount of development work which must be given to it.

[fol. 4005] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #204

Bell Telephone Quarterly, January, 1923

P. 8:

In a circuit using intermediate telephone repeaters, and some circuits have as many as eight repeaters operated in tandem, it is necessary that they be properly spaced, taking into consideration both the available repeater station locations and the electrical characteristics of the circuit facilities. The energy levels at each repeater must be carefully predetermined, as it is important that the energy delivered to and by each be kept within proper limits; that is, too much energy must not be sent out from one repeater or it will cause "cross talk" in adjacent circuits, and, on the other hand, the energy must not be allowed to drop off so far that its magnitude at the input of a repeater is only about the same as that of the noise which happens to exist on the circuit, as this condition will result in the noise being amplified to an objectionable degree along with the amplification of the speech currents.

The matter of proper arrangement of repeaters in a single circuit as described above is only one of the important features which must be taken into consideration in the design of a network of long distance circuits, but it serves to illustrate that the problem is very decidedly one of considering each circuit and also groups of circuits as a whole at the time the design work is done, and similar centralized control is of equal or greater importance in the every day maintenance and operation, if satisfactory service is to be secured.

Telegraph

P. 9:

Plant of the type provided by the Long Lines Department for the handling of long distance telephone service is

utilized to furnish certain classes of telegraph service using simultaneously the same wires that are required for telephone purposes. Rapid as has been the growth of long [fol. 4006] distance telephone service, no less rapid has been the development of this telegraph service. There are now 525,000 miles of telegraph circuits in operation, and service under special contracts is furnished to banks, brokers, press associations, packers and other commercial organizations. These telegraph circuits are also used in the operation and maintenance of the plant and for handling official telegraph business.

Morse's original telegraph used two wires and was only capable of transmitting in one direction at a time. This transmission was slow and the incoming signals were recorded in dots and dashes by a tape recorder. Contrasted with this we may have today one pair of copper wires carrying simultaneously one and one-half telephone circuits, two telegraph circuits of the more common direct current type using ground return and as many as ten carrier current telegraph circuits. Furthermore, each of these twelve telegraph circuits may be operated in both directions simultaneously by the ordinary duplex telegraph methods and if desired, by the use of printing telegraph apparatus, each may be made to print from one to four messages in each direction. A complete arrangement of this latter type is not now in regular use, but in many cases a single pair of wires is carrying one and one-half telephone and twelve telegraph circuits. Printing telegraph apparatus is operated on a part of the telegraph circuits but most circuits are manually operated. The quadruplex system has not been found practicable for use in the Long Line plant.

Telegraph service was first furnished by the Long Lines Department on wires used for telegraph only. This was followed in turn by the simplex system, which furnished one telephone and one telegraph circuit simultaneously, the [fol. 4007] composite system which added a second telegraph circuit for each pair of wires, and finally by the carrier current system, which has brought the number of telegraph circuits per pair of wires, where suitable conditions exist, up to a practicable total of twelve.

As the telegraph systems now in use on the open wire lines are not suitable for use on long, small gauge, loaded, cable circuits, the recent extensive installation of this type

of plant by the Long Lines Department has made desirable the use of still another telegraph system. This newly developed system is operated on the "metallic" basis, furnishing but one telegraph circuit per pair of wires, but these wires may also be used for telephone purposes. It is thought, however, that ample telegraph facilities will be available in the toll cables to meet all requirements along these routes for a long period, or until additional cables are needed for telephone purposes. Each of these circuits may be operated in both directions at the same time without interference to the telephone circuit carried on the same wires.

[fol. 4008] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #205

Bell Telephone Quarterly, October, 1928

By-products of Telephone Research

There may be either one of two motives behind scientific research. On the one hand, there is the motive of adding to human knowledge, in which case the research is customarily referred to as "pure," and as recompense for the labor and money involved comes the intellectual satisfaction of having successfully unraveled some puzzling secret of Nature. On the other hand, research may be carried on with the idea of adapting its results as quickly as possible to some practical and useful end, in which case it is customary to call it "applied"—hopefully anticipating a successful application.

Aside from the difference in attitude on the part of the sponsor of the program, pure and applied research are identical. There may, indeed, be no difference in attitude on the part of the research workers themselves. These two branches of scientific endeavor enter equally deeply into the secrets of the universe; they avail themselves of the same instrumental and other aids to investigation; and, indeed, in any given field they frequently overlap. They are, in fact, the same thing seen from different viewpoints.

P. 2:

Applied, like pure research, is ceaselessly adding to the store of human knowledge, and like pure research is likely

to find practical application in diverse and unexpected ways. It usually yields its sponsor the information he sought. It frequently opens up additional possibilities of which he originally scarcely dreamed. An outstanding phenomenon in the progress of science is that advance in one field almost invariably makes advances possible in other [fol. 4009] fields. Out of devedopment in electricity came many applications of electrical science to chemistry; these advances in chemistry reacting in turn to increase our knowledge and applications of electricity. Countless illustrations from a wide diversity of fields could be cited. The purpose of this article is to illustrate the fecundity of science by describing some striking instances from telephone research.

The program of telephone research as supported by the American Telephone and Telegraph Company for the benefit of the operating companies of the Bell System is directed steadfastly toward the goal of better, more comprehensive and less costly service for the customer. Those who are responsible for directing this program of research look far into the future. They are concerned not only with the minor problems that arise from day to day but also with broad developmental tendencies which may find expression in the nation's telephone system only after the lapse of years or even decades. Herein lies an adequate explanation of the rapid advancement of the telephone art in America during its half century of life. The number of separate lines of research if they permitted of distinct enumeration would be well up in the hundreds and the number of problems which have been proposed and solved would total tens of thousands. The information gained by these researches is today combined in certain ways for direct application to the telephone art. In the years to come and when supplemented by new discoveries, it may be combined in quite different and more effective ways for the benefit of the telephone user. Most telephonic devices are like a child's building blocks, susceptible of combination in a variety of ways and many of the combinations seem, upon superficial examination, quite different from the telephone itself.

[fol. 4010] Somewhat over a year ago, an announcement was made that a commercial type of talking motion picture had been developed in the Bell Telephone Laboratories. This led many persons to wonder why a talking motion pic-

ture should result from investigations carried on to im-
[fol. 4011] prove telephone service. The line of descent is simple and direct. It has involved the bringing into harmonious association of devices which are of use in telephony although not in the particular ways required by the new association.

P. 3:

Out of researches directed to the improvement of the familiar telephone transmitter and receiver came, on the one hand, various high quality transmitters. One of these is now employed in the public address system and is also in well-nigh universal use for "pickup" in radio broadcasting. On the other hand, there came the loud speaking receiver now generally known in many different forms. Out of researches underlying the telephone repeater—itself an amplifier—came a wide variety of amplifiers for speech and other uses, of capacities ranging from that of the tiny deaf set which can be carried in the pocket to that capable of projecting a speaker's words to an audience of 100,000 persons.

Such devices as improved or special forms of transmitters, receivers and speech amplifiers are, in the hands of the telephone engineer, so many building blocks and can be combined in various ways to meet various needs. One of these special combinations, perhaps as well known as any, is the public address system. Another takes the form of a perfected phonograph. These, in turn, have been merged by special adaptation to form part of the talking motion picture system.

The phonograph for talking motion pictures must employ large records capable of running for 15 minutes, a single sound record accompanying each reel of film. In the improved phonograph which has emanated from the Bell Laboratories have been incorporated studies along such diverse lines as mechanical vibrating systems, speech amplifiers and the transmission of telephonic currents through electric networks. It was necessary to perfect both the reproducing instrument and the method of cutting records.

The principles that guided the redesign of the phono-
[fol. 4012] graph itself, strikingly display the unity that pervades nature. The exact statement of the flow of telephone current through an electric circuit leads to certain mathematical expressions that are similar to those express-

ing the flow of mechanical vibrations through such a sound transmitting device as the phonograph. The phonograph needle is not perfectly rigid but bends slightly sideways when tracing the undulating line of the record. It, in turn, drives the elastic diaphragm through an appropriate coupling mechanism. The column of air contained within the horn, to the small end of which the diaphragm is attached, is likewise an elastic member. All of these moving parts have mass or inertia, elasticity or springiness and their motion involves some friction. These quantities are analogous respectively to the inductance, capacity and resistance of electric circuits.

To every electric circuit there is therefore an analogous mechanical "circuit" possessing the same sound transmitting properties. Telephonic circuits have been the object of study in our laboratories, almost since Bell's invention of the telephone, and an extensive knowledge of their characteristics has been accumulated. Thus the simple telephone line will attenuate some frequencies more than others, with the result that the received sound, although intelligible, lacks the quality of the original one. It is possible, however, to so group and adjust the resistance, capacity and inductance (an expensive undertaking when carried out on a large scale) that except for a gradual lowering of volume level, the transmission will be perfect. The conclusion seemed warranted therefore, that a mechanical system might be built which would also transmit sound perfectly—a much-to-be-desired property with which to endow the phonograph. To learn its proportions, the first step was naturally to change the meaning of certain symbols in a collection of mathematical expressions with which telephone engineers were already familiar since they expressed [fol. 4013] the electrical behavior of certain very familiar circuits. Study of the modified equations then supplied guiding principles to be followed in developing the vibrating parts of the improved phonograph. Just as the improvement of telephone lines has involved the invention of many distinct electrical appliances, so the improvement of the phonograph has necessitated the invention of many new mechanical arrangements, each of which plays an analogous part to some electrical device and whose design has been facilitated by the understanding previously gained of the latter.

P. 5:

The method until recently in vogue of recording upon wax records was also susceptible of great improvement. It employed a large funnel-like concentrator to collect enough sound energy from the air to drive the cutting tool through the record. The result was at best quite an imperfect copy of the original sound. Here was found another opportunity to apply several telephone developments, among them the high quality condenser transmitter and the speech amplifier. Using a suitable amplifier, the current from a pick-up transmitter is now enlarged to such an extent that it operates a magnetically driven cutting tool. Records so engraved are vastly superior to the old style, and those now known in the phonograph trade as "electrically cut" are produced in this way.

Tracing the sequence of research and application, we temporarily left the story of talking motion pictures unfinished. It now requires but a moment to describe the erection and keying of its arch. Having on one hand a perfected public address system capable of filling any auditorium, and on the other a perfected phonograph and means for making high quality records, there remained but the two steps of associating the phonograph and public address system so that the former could operate the latter, and the [fol. 4014] synchronization of the phonograph record with the motion picture film. This involves synchronization with the camera during exposure of the film, and with the projector during subsequent display. Means for accomplishing both these were provided by supplementary developments.

P. 6:

The Telephone Laboratories and telephone research have also been called upon to perfect means for recording speech photographically upon a long strip of film like motion picture film. The purpose of the sound record upon the film is the same as that of the large phonograph disc, and during reproduction is run synchronously with the pictorial film. This form of talking movie, like its predecessor, is in use in public theatres.

Here we have several illustrations of the varied applications of which scientific developments permit. Without having been originally sought after, almost as though a

field when once sowed should bear several rich yields, telephone research has given such by-products as the public address system, the "Audiphone" (aids to the hard-of-hearing), the orthophonic phonograph, the talking movies, the artificial larynx. To carry the simile further, each of these special devices or systems has required development and supplementary invention at the hands of the technical staff, much as a farmer's crop, the prey of various antagonistic influences, must be cultivated and cared for at the critical stages of its growth.

The development of the repeater also brought to hand means of magnifying sounds which are ordinarily below the level of hearing. The electric stethoscope followed and is proving of great value. The same principle is finding application in the amplifiers of radio receivers; and the Navy, quick to seize upon it, requested the development of a ship-announcing system whereby orders from one or more points are instantly announced over an entire ship.

P. 7:

[fol. 4015] One of the most picturesque by-product applications of telephone research is that which revolutionized the old and supposedly well-nigh perfected art of submarine ocean telegraphy. Searching for new magnetic materials that might have application to telephony, engineers of Bell Telephone Laboratories discovered a remarkable alloy to which they gave the name permalloy because of the extreme ease with which it can be magnetized. This material is finding important uses in the telephone plant—loading coils in particular might be mentioned—but we pass at once to its use in the submarine telegraph cable. Here it is applied as a tape wound around and continuously "loading" the copper conductor, thereby reducing attenuation of signals to such a point that a transatlantic permalloy cable handles about as much traffic as five cables of the old style.

Another illustration of what permalloy makes possible is found in the miniature receiver of the audiphone. This device, although so small that its diaphragm is scarcely half an inch in diameter, is just as efficient for the purpose as the standard telephone receiver; and instead of weighing about a pound, is so light that it rests within the ear of the user.

The developments resulting from telephone research cover a most diversified field. Some of them fall naturally in line as logical extensions of the service. Others are obviously and distinctly in the class we have designated as by-products. Separating these two, there is no hard and fast line of demarcation. Occasionally a particular development raises the natural question as to whether it is a by-product or an extension of service. Whichever way the decision goes, machinery is available for putting it to use. By-product developments of Bell Telephone Laboratories, not being made available to the public as a logical extension of [fol. 4016] telephone service, are made available through manufacture by the Western Electric Company and the commercial distributing and business arrangements of its subsidiary companies, Electrical Research Products and the Graybar Electric Company.

P. 8:

Regarding the transmission of pictures no question arises as to whether or not it should be classed as a by-product. It constitutes the transmission of a kind of intelligence which in its way is just as useful as a telephone conversation. The same may doubtless in time be said of television, although at present this is in a distinctly experimental stage. The genealogy of both shows a clear descent from telephone investigations, each system employs such telephonic principles as carrier current transmission used extensively in multiplexing our long lines, vacuum tube amplifier—an outgrowth of the repeater—and schemes for equalizing the picture circuit which have resulted from fundamental studies in telephone transmission.

The value of the research work of the Bell System when considered in relation to the System's primary activity of rendering telephone service is sufficient many times over to justify its cost. Improvements in such departments as lead cable and repeaters, as used on the longer telephone circuits, have enabled the Associated Companies to cut many millions of dollars from what an equivalent telephone plant would have cost had these improvements not been available. As seemingly minor an item as a new contact metal saves three millions a year.

Telephone research is, therefore, a business that yields the telephone-using public generous and frequent dividends in the form of bettered service. And, in the process of

advancing the telephone art, more or less unpremeditated benefits are conferred upon other arts and industries.

P. 9:

[fol. 4017] In a complete appraisal of the value of the applied science program of the Bell System, recognition should be given to such side developments. To state their value in monetary terms would be extremely difficult. They are great, however, and are destined to increase in value as time passes, for of all growing things the seeds of scientific research are perhaps the most fruitful. The sunlight which stimulates them comes from the broadening horizon of human needs, and the more highly developed our industrial civilization becomes the more widespread is their applicability. For fecundity the principles of science are like the teeth from the fire-breathing dragon of old, but their influence is as constructive as that of the mythical monster and its progeny were supposed to be destructive.

[fol. 4018] DEFENDANTS' D EXHIBITS

(Introduced During Cross-examination of Plaintiff's Witnesses in Chief and Plaintiff's Rebuttal Witnesses)

[fol. 4019] EXHIBIT D-1

Per Cent Condition of Manual Central Offices, by Central Offices

Offices	Average %	Ratio of Total	Composite
Austin	94.90	4.16	3.95
Belmont	94.18	3.91	3.68
Beverly	93.87	1.84	1.73
Calumet	92.93	3.42	3.18
Canal	91.03	2.14	1.95
Dearborn	94.21	3.95	3.72
Delaware	89.67	1.35	1.21
Douglas	90.56	1.07	0.97
Edgewater	92.28	4.55	4.20
Humboldt	93.28	3.62	3.38
Hyde Park	93.10	6.15	5.73
Irving	94.96	4.15	3.94
Kedzie	93.21	4.03	3.76
Kildare	95.13	4.26	4.05
Lafayette	94.02	1.78	1.67
Lake View	92.18	6.27	5.78
Lawndale	93.88	3.92	3.68
Lincoln	94.60	3.10	2.93
Merrimac	96.25	2.05	1.97
Monroe	92.34	2.64	2.44
Newcastle	96.05	0.87	0.84
Oakland	91.11	3.56	3.24
Prospect	94.23	3.77	3.55

Offices	Average %	Ratio of Total	Composite
Pullman	94.51	1.60	1.51
Rogers Park	94.77	5.07	4.80
South Chicago	94.03	3.23	3.04
Stewart	94.35	5.16	4.87
Wentworth	92.24	2.97	2.74
West	90.87	2.22	2.02
Yards	92.45	2.18	2.02
Tandem	86.81	1.01	0.88
Total	.....	100.00%	
Composite per cent condition	.....	.....	93.43%

[fol. 4020] EXTRACTS FROM EXHIBIT, DEP. D-2

Per Cent Condition of Manual Central Office Telephone Equipment

Account 221

Summary for Columet Office

	Component Parts:	Average %	Ratio of Total	Composite
1	A & B Section Frames	91.9	16.0%	14.70
2	Keys	84.7	1.3%	1.10
3	Cords	57.6	0.3%	0.17
4	Plugs	71.6	0.4%	0.29
5	Jacks	84.9	7.0%	5.94
6	Relays	97.2	17.0%	16.52
7	Message Registers, Condensers, Repeating Coils, & Resistances	99.0	9.0%	8.91
8	Cables (Local, Multiple, & Other)	91.7	19.0%	17.42
9	Frames, Racks, & Fuse Boards	96.5	12.0%	11.58
10	Jumpers, Terminals, & Protectors	93.8	9.0%	8.44
11	Test, Repair, & Traffic Desks	92.7	2.0%	1.85
12	Storage Batteries	58.5	2.0%	1.17
13	Power Machines	92.1	2.0%	1.84
14	Power Boards & Conduit Wiring	100.0	3.0%	3.00
	Totals	....	100.0%	
	Per Cent Condition	.....	.....	92.93%

[fol. 4021] EXTRACTS FROM EXHIBIT D-3

Illinois Bell Telephone Company

Instructions for the Inspection of Central Office Telephone Equipment

These instructions are intended to cover the inspection of manual central office telephone equipment for the pur-

pose of, listing observable defects in the various kinds of equipment so that a comparison can be made of the condition of the existing equipment with similar new equipment.

* * * * * * * *

(This extract is taken from total instructions comprising 14 pages.)

[fol. 4022] D7

Halsey, Stuart & Co., Inc.

Library

$25,000,000

International Telephone and Telegraph Corporation

Twenty Year 5½% Convertible Gold Debenture Bonds

Dated September 1, 1925. Due September 1, 1945

Interest payable March 1 and September 1 in New York

Convertible at the option of the holder on March 1, 1926, or at any time thereafter prior to September 1, 1935 (or, if called for earlier redemption, until and including such redemption date), into common stock of the International Telephone and Telegraph Corporation at the rate of $125 principal amount of bonds for $100 par value of stock

Redeemable, at the option of the Corporation, in whole but not in part, on any interest date upon 60 days' published notice, at the following prices with accrued interest: Prior to or on September 1, 1930, at 105%; thereafter until and including September 1, 1935, at 104%; thereafter until and including September 1, 1940, at 103%; thereafter until and including September 1, 1941, at 102%; thereafter until and including September 1, 1942, at 101%; thereafter until maturity at 100%.

Coupon Bonds in Denominations of $1,000 and $500, Registerable as to Principal and Interchangeable

The National City Bank of New York, Trustee

Sosthenes Behn, Esq., President of the Corporation, has summarized as follows his letter to us stating the particulars in regard to this issue:

Purpose of Issue.—These Twenty Year 5½% Convertible Gold Debenture Bonds are to be issued to the Western Electric Company, Inc., in part payment for the entire capital stock and certain notes payable of International Western Electric Company, Inc.

Provisions.—The Bonds will be the direct obligation of the International Telephone and Telegraph Corporation. They will be issued under an indenture in which the Corporation will agree that except purchase money mortgages and except pledges in the usual course of business for loans or indemnity for terms not exceeding one year, the Corporation will not mortgage or pledge any of its property without securing these Bonds ratably with the obligations secured by such mortgage or pledge.

Conversion Privilege.—The Bonds are to be convertible, at the option of the holder, on March 1, 1926, or at any time thereafter prior to September 1, 1935, into the common stock of the International Telephone and Telegraph Corporation at the rate of $125 principal amount of such Bonds for $100 par value of such stock (with adjustment for accrued interest and current dividend). This conversion privilege becomes operative March 1, 1926, by which time it is contemplated that the common stock outstanding will have been increased from the present amount of approximately 296,000 shares to approximately 400,000 shares of $100 par value, by the sale to stockholders of approximately 100,000 shares.

Earnings.—International Telephone and Telegraph Corporation owns over 97% of the common stock of the Cuban Telephone Company, over 97% of the common stock of the Porto Rico Telephone Company, and 50% (the other 50% being owned by the American Telephone and Telegraph

Company) of the stock of the Cuban-American Telephone and Telegraph Company. In 1924 a substantial interest in Compania Telefonica Nacional de Espana (National Telephone Company of Spain) was acquired. With this issue of Bonds and sums to be secured by sale of common stock, all of the capital stock of the International Western Electric Company, Inc., is being acquired. Combining (a) the net income of International Telephone and Telegraph Corporation and subsidiaries, after payment of all fixed charges, preferred dividends and dividends to minority interests in subsidiary companies, which deductions in 1924 amounted to $889,843, with (b) the net income of International Western Electric Company, Inc., (which has no funded debt) available for interest, excluding income from certain properties disposed of by it prior to the aforesaid purchase of its stock, the consolidated net income for the past four years is as follows:

Years ended Dec. 31	International Telephone and Telegraph Corp. net income	International Western Electric Co. net income	Consolidated net income
1921	$953,000	$3,017,000	$3,970,000
1922	1,108,000	2,831,000	3,939,000
1923	1,464,000	2,916,000	4,380,000
1924	1,930,000*	3,285,000	5,215,000

* Excluding certain non-recurrent profits.

The consolidated net income for the six months ended June 30, 1925, amounted to $2,612,000.

Such consolidated net income as stated above, in the four and a half years ended June 30, 1925, averaged over three times the maximum annual interest requirements of $1,375,000 on this issue of Bonds, and in 1924 was more than three and three-quarter times such Bond interest requirements.

The above bonds are offered for subscription, subject to the conditions stated below, at 99% and accured interest, to yield over 5.58%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Thusday, August 20, 1925, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case to award a smaller amount than applied for.

All subscriptions received are to be subject to the due authorization and issue of the Bonds as planned, and to approval by counsel of the form and validity of the documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about September 4, 1925) will be stated in the notice of allotment. Trust receipts of J. P. Morgan & Co., exchangeable for definitive Bonds when received, will be delivered.

J. P. Morgan & Co. First National Bank of New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Edward B. Smith & Co. Dominick & Dominick.

New York, August 20, 1925.

[fol. 4023] International Telephone and Telegraph Corporation, 41 Broad Street, New York

August 19, 1925.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York City.

DEAR SIRS: Referring to the $25,000,000 Twenty-Year 5½% Convertible Gold Debenture Bonds which International Telephone and Telegraph Corporation is about to issue to the Western Electric Company, Inc., in part payment for the entire capital stock and certain notes payable of International Western Electric Company, Inc., I present the following statement regarding the business of the Corporation and this issue of Debenture Bonds.

International Telephone and Telegraph Corporation was incorporated in 1920 under the laws of the State of Maryland. The Corporation, though essentially a holding company, is through its subsidiaries and associated companies both an operator of telephone systems and a manufacturer of telephone equipment.

The Corporation owns over 97% of the common stock of the Cuban Telephone Company and over 97% of the common stock of the Porto Rico Telephone Company, these two companies serving practically the entire population of Cuba

and Porto Rico. The Corporation owns also 50% (the other 50% being owned by the American Telephone and Telegraph Company) of the stock of the Cuban-American Telephone and Telegraph Company, forming the connecting link by telephone cable between Cuba and the United States and furnishing through telephone service between the Bell Telephone System and the Island of Cuba.

In 1924, International Telephone and Telegraph Corporation, in cooperation with leading Spanish bankers, organized the Compania Telefonica Nacional de Espana (National Telephone Company of Spain) which has an authorized capital of 300,000,000 pesetas (or about $43,000,000 at present exchange rates) of which preferred and common stock to the aggregate amount of 115,000,000 pesetas have been issued. Of the stock issued, substantially all of the preferred stock has been sold to investors, principally in Spain. The International Telephone and Telegraph Corporation besides retaining its financial interest will cooperate fully in the development of such Spanish Company, and under a contract with the Spanish Company will provide technical, financial and purchasing advice and assistance. The Spanish Company has already acquired, in addition to the telephone system taken over from the Government, a large part of the existing privately owned local and long distance systems and now operates approximately 95% of the long distance service and 85% of all local telephones in Spain. The construction and development program for the next ten-year period provides for a total of approximately 400,000 telephones in the Spanish system, or over four times the number now in service.

In April, 1925, International Telephone and Telegraph Corporation acquired a substantial interest in the Compagnie des Telephones Thomson-Houston, which company was recently organized in France to take over the manufacturing and sales activities of the telephone department of the Compagnie Francaise pour l'Exploitation des Procedes Thomson-Houston. By this acquisition an important interest was secured in a plant which for years has produced successfully various types of telephone apparatus and equipment and which has installed for the French Government a number of automatic telephone exchanges in several large cities.

The Twenty-Year 5½% Convertible Gold Debenture Bonds of the International Telephone and Telegraph Corporation are to be issued to Western Electric Company, Inc., in part payment (the balance being payable in cash derived from the sale of International Telephone and Telegraph Corporation common stock, the underwriting of which has been assured to the Corporation) for the entire capital stock and certain notes payable of International Western Electric Company, Inc. This last mentioned company carries on the foreign manufacturing and export operations developed since 1882 by the Western Electric Company, Inc., the principal manufacturer of telephone equipment in the United States. Through wholly owned subsidiaries it operates factories in Woolwich, England; Antwerp, Belgium; Paris, France; Barcelona, Spain; Milan, Italy; and Oslo, Norway. In addition it owns a substantial interest in companies with factories in Tokio, Japan, and Peking, China and holds minor interests in manufacturing plants in other foreign cities. International Western Electric Company, Inc., has been prosperous from its inception and during recent years has shown an increasing ratio of profit. Besides its manufacturing activities, it carries on an extensive business as a distributor of telephone equipment and other electrical supplies, and will have a fifteen year contract, dated September 30, 1925, to act as the exclusive distributor of Western Electric products in all countries except the United States, Canada and Newfoundland. International Western Electric Company, Inc. will have also an agreement under which are acquired rights to several groups of telephone patents which taken together are by far the most valuable in existence.

The growth of the business of International Telephone and Telegraph Corporation as well as that of International Western Electric Company, Inc., is indicated by the following statement. Combining (a) the net income of International Telephone and Telegraph Corporation and subsidiaries, after payment of all fixed charges, preferred dividends and dividends to minority interests in subsidiary companies, which deductions in 1924 amounted to $889,843, with (b) the net income of International Western Electric Company, Inc., (which has no funded debt) available for interest, [fol. 4024] excluding income from certain properties disposed of by it prior to the aforesaid purchase of its stock,

the consolidated net income for the past four years is as follows:

Years Ended Dec. 31	Int. Tel. & Tel. Corp. Net Income	Int. Western Electric Co. Net Income	Consolidated Net Income
1921	$953,000	$3,017,000	$3,970,000
1922	1,108,000	2,831,000	3,939,000
1923	1,464,000	2,916,000	4,380,000
1924	1,930,000*	3,285,000	5,215,000

*Excluding certain non-recurrent profits.

The consolidated net income for the six months ended June 30, 1925, amounted to $2,612,000.

Such consolidated net income, as stated above, in the four and one-half years ended June 30, 1925, averaged over three times the maximum annual interest requirements of $1,375,000 on this issue of Bonds, and in 1924 was more than three and three-quarter times such Bond interest requirements.

Dividends at the rate of 6% per annum have been paid regularly on the common stock of International Telephone and Telegraph Corporation since organization in June, 1920.

The Bonds are to be issued under an indenture with The National City Bank of New York, Trustee, in which indenture the Corporation will covenant that except in the case of purchase money mortgages and of pledges in the usual course of business for loans or indemnity for terms not exceeding one year, the Corporation will not mortgage or pledge any of its property without securing these Bonds ratably with the obligations secured by such mortgage or pledge.

In the indenture, the Corporation will covenant also that if at any time subsequent to March 1, 1926, it shall offer to its stockholders the right to subscribe for any issue of its stock at less than $125 per share, or shall declare a dividend payable in stock, it will publish a notice, addressed to the holders of the Bonds, advising them of such offer or of such stock dividend, at least twenty days prior to the record date upon which the stockholders' right thereto will accrue, so that holders so desiring may convert their Bonds into stock in time to avail of such rights.

The Bonds are to be limited to the present issue of $25,000,000. They are to be dated September 1, 1925, are to

mature September 1, 1945, and are to bear interest at the rate of 5½% per annum, payable semi-annually March 1 and September 1 in each year in New York City. The Bonds are to be convertible at the option of the holder on March 1, 1926, or at any time thereafter prior to September 1, 1935, (or, if called for earlier redemption until and including such redemption date) into the common stock of International Telephone and Telegraph Corporation at the rate of $125 principal amount of such Bonds for $100 par value of such stock (with adjustment for accrued interest and current dividend). This conversion privilege becomes operative March 1, 1926, by which time it is contemplated that the common stock outstanding will have been increased from the present amount of approximately 296,000 shares to approximately 400,000 shares of $100 par value by the sale to stockholders of approximately 100,000 shares (which sale stockholders have been asked to authorize at a special meeting to be held September 3, 1925, and the underwriting of which has been assured to the Corporation).

The Bonds are to be issued in coupon form in denominations of $1,000 and $500, registerable as to principal and interchangeable. The Bonds are to be redeemable, at the option of the Corporation, in whole but not in part, upon notice published sixty days previously as provided in the indenture, on any interest date, at the following prices with accrued interest:

Prior to or on September 1, 1930, at	105%
Thereafter until and including September 1, 1935, at	104%
Thereafter until and including September 1, 1940, at	103%
Thereafter until and including September 1, 1941, at	102%
Thereafter until and including September 1, 1942, at	101%
Thereafter until maturity at	100%

If so called for redemption prior to September 1, 1935, holders will retain the above described conversion privilege until and including the redemption date.

Application for the listing of these Bonds on the New York Stock Exchange will be made by the Corporation in due course.

Yours very truly, (Signed) Sosthenes Behn, President.

[fol. 4025] DEF. EX. D-8, IDENT.

Halsey, Stuart & Co., Inc.

Library

$40,000,000

New England Telephone and Telegraph Company

First Mortgage 4½% Gold Bonds, Series B

Dated May 1, 1926. Due May 1, 1961

Not Redeemable Before 1958

Interest Payable May 1 and November 1 in New York City or in Boston

Coupon Bonds in denominations of $1,000, $500 and $100, registerable as to principal. Registered Bonds in denominations of $1,000, $5,000 and $10,000. Coupon Bonds and registered Bonds, and the several denominations, interchangeable

Redeemable, at the Option of the Company, in Whole but not in Part, Upon 60 Days' Notice, on May 1, 1958, or on Any Interest Date Thereafter, at 100% and Accrued Interest

A legal Investment, in the Opinion of Counsel, for Savings Banks in Massachusetts, Rhode Island, Maine, Vermont and Connecticut

The First National Bank of Boston, Trustee

Matt B. Jones, Esq., President of the Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Property.—New England Telephone and Telegraph Company, with its subsidiary and connecting companies, provides telephone service throughout Maine, New Hampshire, Vermont, Massachusetts and Rhode Island and serves a population estimated at 6,500,000. The book cost of the Company's real estate, buildings and telephone plant, which cost

is considerably less than their present value, was over $219,000,000 on March 31, 1926. Other assets amounted to over $21,000,000. After giving effect to this financing, total assets will be over $250,000,000, whereas the total funded debt, including this issue, will be only $86,820,000.

Security.—The First Mortgage covers as a first lien all the real estate and other property, other than securities, now owned or hereafter acquired by the Company in Maine, New Hampshire, Massachusetts and Rhode Island, subject only to a mortgage of $820,000 on a specific parcel of real estate.

Purpose of Issue.—The proceeds of the Series B Bonds, to the extent of about $27,000,000, will be used to repay advances obtained from the American Telephone and Telegraph Company for the extension and improvement of the Company's telephone system. The remainder of the proceeds will be used for the further extension and improvement of the Company's telephone system.

Earnings.

Years Ended Dec. 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges*	Net Income
1921	$37,312,788	$6,998,844	$1,012,449	$5,986,395
1922	42,320,747	8,152,617	1,959,449	6,193,168
1923	45,027,835	5,841,497	2,647,294	3,194,203
1924	48,418,279	7,240,676	3,508,373	3,732,303
1925	55,064,421	8,677,208	4,755,988	3,921,220

*Including interest on advances from the American Telephone and Telegraph Company.

During this period of five years, net earnings available for interest have averaged over two and one-half times interest charges. The net earnings available for interest in 1925 were more than twice the annual interest requirements on the funded debt of the Company as it will be outstanding after the issue of these Bonds.

Substantial increases in rate schedules throughout the Company's territory became effective during the latter part of 1925 and have been clearly reflected in the Company's earnings for the first quarter of 1926. Net earnings for the quarter amounted to $3,232,146, and were at the rate of more than three times the interest requirements on the

Company's total funded debt, including the present issue of Bonds.

Equity.—The Company has outstanding capital stock (including installments) in the amount of $110,495,327, of which about 61% is owned by the American Telephone and Telegraph Company. Dividends on the stock as outstanding from time to time have been paid at the rate of not less than 6% per annum since 1898. The present dividend rate is 8% per annum.

The above bonds are offered for subscription, subject to issue as planned and to approval of legality by counsel, at 94½% and interest to yield over 4.80% to maturity.

Subscription books will be opened at the office of J. P. Morgan & Co., at 10 o'clock A. M., Thursday, May 13, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about May 26) will be stated in the notices of allotment. Temporary Bonds or Interim Receipts, exchangeable for definitive Bonds when received from the Company, will be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder, Peabody & Co. First National Bank, New York. The National City Company, New York. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

Dated May 13, 1926.

[fol. 4026] New England Telephone and Telegraph Company

Boston, Mass., May 12, 1926.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

DEAR SIRS:

With reference to the proposed issue of $40,000,000 First Mortgage 4½% Gold Bonds, Series B, of New England Telephone and Telegraph Company, I give you the following information regarding, the business of the Company and this issue of Bonds:

In opinion of counsel, these Bonds are a legal investment for Savings Banks in Massachusetts, Rhode Island, Maine, Vermont and Connecticut.

New England Telephone and Telegraph Company was organized in 1883 under the laws of the State of New York. With its subsidiary and connecting companies, it furnishes telephone service throughout the States of Maine, New Hampshire, Vermont, Massachusetts and Rhode Island. The population served is estimated at 6,500,000. New England Telephone and Telegraph Company is one of the Associated Companies of the Bell System and has connections for the interchange of toll traffic with all other Bell System companies in the United States and with telephone systems in Canada and in Cuba.

On March 31, 1926, the Company owned and operated 1,099,587 telephone stations and the book cost of its real estate, buildings and telephone plant, which cost is considerably less than their present value, was more than $219,000,000. Other assets, including accounts receivable, etc., amounted to over $21,000,000. After giving effect to this financing, the Company's assets will amount to about $250,000,000, whereas the total funded debt including the present issue of bonds will be only $86,820,000.

The proceeds of the Series B Bonds, to the extent of about $27,000,000, will be used to repay advances obtained from the American Telephone and Telegraph Company for the extension and improvement of the Company's telephone system. The remainder of the proceeds will be used for the further extension and improvement of the Company's telephone system.

The Company has outstanding capital stock (including instalments) in the amount of $110,495,327, of which about 61% is owned by the American Telephone and Telegraph Company. Dividends on the stock as outstanding from time to time have been paid at the rate of not less than 6% per annum since 1898. The present dividend rate is 8% per annum.

The gross revenues, net earnings (after deducting operating expenses, maintenance and depreciation, taxes, rentals and miscellaneous income charges), interest charges and net income of New England Telephone and Telegraph Company during the past five years have been as follows:

Years Ended Dec. 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges*	Net Income
1921	$37,312,788	$6,998,844	$1,012,449	$5,986,395
1922	42,320,747	8,152,617	1,959,449	6,193,168
1923	45,027,835	5,841,497	2,647,294	3,194,203
1924	48,418,279	7,240,676	3,508,373	3,732,303
1925	55,064,421	8,677,208	4,755,988	3,921,220

*Including interest on advances from the American Telephone and Telegraph Company.

During this period of five years, net earnings available for interest have averaged over two and one-half times total interest charges. The net earnings available for interest in 1925, amounting to $8,677,208, were more than twice the annual interest requirements on the funded debt of the Company as it will be outstanding after the issue of these Bonds.

The decline in net earnings in 1923 was due to the New England telephone strike, which resulted in a loss of net earnings to the Company of about $2,500,000.

Substantial increases in rate schedules throughout the Company's territory became effective during the latter part of 1925. Earnings for the greater part of 1925 did not reflect the increased revenues arising from the changes in rate schedules.

The Company's earnings for the first quarter of 1926, however, show clearly the results of the above mentioned increases in rate schedules. Gross revenues for the quarter amounted to $15,256,341, and net earnings amounted to $3,232,146. Net earnings for the first quarter of 1926 were at the rate of more than three times the interest requirements on the Company's total funded debt, including the present issue of Bonds.

[fol. 4027] The Company's plant is maintained at a high standard of operating efficiency and adequate charges have been made, and are made currently, to provide for depreciation and obsolescence.

The Bonds will be issued under the First Mortgage dated June 1, 1922, to The First National Bank of Boston, Trustee. This Mortgage covers as a first lien all the real estate and other property, other than securities, now owned or hereafter acquired by the Company in the States of Maine, New Hampshire, Massachusetts and Rhode Island and also all shares (except directors' qualifying shares) of stocks

of The New England Telephone and Telegraph Company of Massachusetts, Southern Massachusetts Telephone Company, Providence Telephone Company of Massachusetts, and The Massachusetts Telephone and Telegraph Company, subject only to a mortgage of $820,000 on a specific parcel of real estate acquired subject to such mortgage. The First Mortgage now secures $1,000,000 4% Debenture Bonds of 1900 due in 1930 and $10,000,000 5% Bonds of 1912 due in 1932 ratably with the $35,000,000 5% Bonds, Series A, outstanding and the $40,000,000 4½% Bonds, Series B, presently to be issued.

The amount of bonds authorized to be issued under the First Mortgage is limited so that the amount thereof at any time outstanding, when added to the then outstanding amount of the 4% Debenture Bonds of 1900, the 5% Bonds of 1912 and any underlying bonded debt as defined in the Mortgage, shall not exceed twice the amount of the then outstanding capital stock. Bonds are issuable under the Mortgage to refund the 4% Debenture Bonds of 1900, the 5% Bonds of 1912, any bonds issued under the First Mortgage and any underlying debt. Subject to the above limitation in amount, bonds are also issuable for the acquisition of additional property (including securities of other corporations) and for betterments. If at any time, however, the amount of outstanding bonds secured by this Mortgage, when added to the prior bonded debt (if any) of the Company, shall exceed the amount of the then outstanding capital stock, additional bonds will be issuable for not exceeding 75% of the expenditures for such additional property and betterments. The issue of bonds in respect of stock and other securities is limited so that not more than one-third of the security under the Mortgage shall consist of stock and unsecured obligations of other corporations.

The Mortgage further provides that so long as the Series A Bonds are outstanding, no bonds will be issuable, except for refunding, unless the net earnings of the Company available for interest charges during any twelve consecutive months out of fifteen months next preceding the proposed issue shall have been not less than one and one-half times the interest during such period on the Company's outstanding bonded debt as defined in the Mortgage, plus the amount of interest for twelve months on the bonds proposed to be issued. The bonds issuable under the Mortgage may be of several series and may vary as to interest rates, maturity

dates, sinking fund and other provisions as may be determined by the Company from time to time.

The Series B Bonds, limited to the above-mentioned principal amount of $40,000,000, will be dated May 1, 1926 and will mature May 1, 1961. They will bear interest from May 1, 1926 at the rate of 4½% per annum, payable semiannually on May 1 and November 1. Principal and interest will be payable at the office or agency of the Company in New York City or, at the option of the holder, in Boston, Massachusetts. The Bonds will be in coupon form, registerable as to principal, in denominations of $1,000, $500, $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000. The coupon Bonds and registered Bonds and the several denominations will be interchangeable. The bonds will be non-callable for 32 years, but may be redeemed at the option of the Company, in whole but not in part, upon 60 days' notice, on May 1, 1958, or on any interest date thereafter, at 100% and accrued interest.

Application will be made to list the Bonds on the New York and Boston Stock Exchanges.

Very truly yours, Matt B. Jones, President.

[fol. 4028] DEFENDANT'S EXHIBIT D-12

Changes in Chicago Schedule Since October 1, 1923

Sheet No.	Effective	
9	May 1, 1924	Regulations—Ownership of facilities
8	June 1, 1924	New rates for switching apparatus and power equipment for Combination Manual and Mechanical Systems
10–11	June 1, 1924	Rates for Wiring Plans
12	June 1, 1924	Rates for Order Receiving Turrets
13	Oct. 1, 1924	Rates for hand and foot transmitter cut-outs
14	Sept. 1, 1925	Rates for Selector—Connectors
15	June 6, 1926	Extra Mileage charges in territory adjacent to Chicago exchange and not served by suburban exchanges
16	April 4, 1927	Hand set monthly rate $.50
2A	Sept. 1, 1927	Regulations covering deposits for establishing credit
17	Oct. 1, 1927	Time of day service
18	Dec. 1, 1927	Three slot coin-box equipment
Revised 2	Dec. 1, 1927	Revision in billing and collection practices (Rotation billing)
3A	Dec. 1, 1927	Revision in billing and collection practices (Rotation billing)
Revised 16	Feb. 16, 1928	Hand Telephone sets. Reduction of rate from $.50 to $.25
19	Sept. 15, 1928	Additional central office equipment for Night, Sunday and Holiday service in connection with Private Branch Exchange service
Revised 3A	Jan. 12, 1929	Revision in paragraph r lative to registers on measured service lines

[fol. 4029]

Sheet No.	Effective	
20	Jan. 12, 1929	Rates for subscribers' sets for outdoor use
21	July 1, 1929	Rates for Conference Equipment
22	Aug. 1, 1929	Rates for Busy Test Cabinets
23	Oct. 1, 1929	Rate reduction on dial stations equal to the number of trunks on Manual Private Branch Exchange Systems in Dial Central Office Areas
24	Dec. 25, 1929	Rates for New Cordless Private Branch Exchange Switchboard
25	Jan. 30, 1930	Rates for Dial Private Branch Exchange Systems having a capacity of 100 lines or less
26	Aug. 18, 1930	Rates for Key Station Dial Private Branch Exchange Systems
27	Jan. 1, 1931	Rates for Code Calling Systems
4A	Mar. 1, 1931	Rates for Residence Private Branch Exchange Trunks
28	Mar. 1, 1931	Revised Rates for Jack and Plug Equipment

[fol. 4030] EXTRACTS FROM EXHIBIT D-15

"An ordinance authorizing Chicago Telephone Company to construct, maintain and operate a line of telephone wires in the city of Chicago (Passed January 4, 1889. Accepted January 10, 1889)

* * * * * * *

§ 6. Compensation—service rates—use by city—rights reserved.—§§ 6. The said Chicago Telephone Company shall file with the comptroller of the city on the first days of January and July of each year, a statement of its gross receipts from the telephone business done by said company within the city of Chicago, for the six months next preceding such statement, which statement shall be sworn to by the president and secretary of said company, and, at the time of filing said statement, the said company shall pay into the city treasury three (3) per cent on such gross receipts, and said company, during the term for which this ordinance is granted, shall not increase to its present or future subscribers the rates for telephone service now established. And, provided, also, that with the acceptance hereinafter required there shall be filed by said company a schedule showing the rates charged by said company for telephone service at the date of the passage of this ordinance within the limits of the city of Chicago."

[fol. 4031] EXTRACTS FROM DEFENDANTS' EXHIBIT D-16

Ordinance Passed by City Council of City of Chicago November 6, 1907

An Ordinance Authorizing the Chicago Telephone Company to Construct, Maintain, and Operate a Line of Telephone Wires in the City of Chicago

* * * * * * *

R. 1:

1. Grant-Term.—That permission and authority are hereby granted to Chicago Telephone Company, a corporation created and existing under and by virtue of the laws of Illinois, upon the terms and subject to the conditions of this ordinance, to construct, maintain, repair and operate in and under the public streets, alleys, and other public ways of the City of Chicago and under the Chicago River and its several branches, until January 8th, 1929, its system of wires, cables, electrical conductors, poles and conduits for the transmission of sound and signals only, by means of electricity.

[fol. 4032] #. 3. Compensation - Gross Receipts—Local Business.—The said Chicago Telephone Company shall file with the Comptroller of the City within sixty (60) days after the first day of January and of July in each and every year a statement in such form and detail as shall from time to time be prescribed by said Comptroller of all its gross receipts from all the business done by said Company within the City of Chicago for the next six (6) months next preceding said first day of January and of July, which statement shall be sworn to by the President and Secretary of said Company, and at the time of filing said statement the Company shall pay into the City Treasury three per cent. (3%) on all such gross receipts. All moneys received by said Chicago Telephone Company for service, communication and messages from the exchanges, offices, stations or telephones of the said Company or of its lessees, subscribers or patrons, located within the City of Chicago to any exchanges, offices, stations or telephones now or hereafter owned, operated or leased by or to said Company outside the City of Chicago (commonly known and designated as 'toll' service, communication or messages), together with all moneys received by said Chicago Telephone Com-

pany, as its share of the gross receipts for service, communication and messages between the exchanges, offices, stations or telephones of the said Company, or of its lessees, subscribers or patrons located within the City of Chicago and any exchanges, offices, stations or telephones of any other company or person outside said City of Chicago (commonly known and designated as 'long distance' service, communication or messages), shall, for all the purposes of this ordinance, and particularly for the purpose of computing the compensation semi-annually due the City of Chicago hereunder, be deemed and treated as a part of the gross receipts from the business done by said Chicago Telephone Company within the City of Chicago.

* * * * * * *

6. Maximum Rates Fixed-Service and Equipment.—Said Chicago Telephone Company during the term of this ordinance shall furnish upon demand telephone service of any of the classes or kinds mentioned in this section, in the City of Chicago, without discrimination, at the same rates, to all persons, firms and corporations who shall elect to take or use any of such classes or kinds of service, and shall not charge its present or future lessees, subscribers or patrons within the City of Chicago rates for telephone [fol. 4033] service under yearly contracts payable monthly in excess of the following maximum rates:

Rates for Business Telephones

(a) Maximum rates for telephone service furnished for the use of subscribers and their employes in their business.

Flat Rate Service

For a single party line with the right to the unlimited use of the same, $125 per year.

Measured Rate Service

For a single party line, including twelve hundred outgoing conversations or messages over said line, $60 for each period of one year.

For the next twenty-four hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

Every subscriber who will contract to use or pay for seventy-two hundred outgoing conversations or messages during the year at the above rates per message, shall be furnished at the same premises with a second single party line without extra charge, and every subscriber shall be furnished with an additional single party line at such premises, without extra charge, for each six thousand outgoing conversations or messages from such premises he will contract to use or pay for, in addition to said seventy-two hundred, during the year at the rate of 2 cents each.

A single party line or lines, including the right to transmit outgoing conversations or messages without limit, and without any charge per conversation or message, shall be furnished at the rate of one dollar ($1.00) per day each. Every subscriber to or lessee of such a line or lines shall not be charged at the rate of more than two (2) cents each for each and every outgoing conversation or message he may transmit by means of any other line or lines used in addition to or in connection with the line or lines last mentioned, and every subscriber to or lessee of such a line or lines shall be furnished with an additional single party line [fol. 4034] during any year without extra charge for each six thousand outgoing conversations or messages he will contract to use or pay for during the year, at the rate of two (2) cents for each message.

Subscribers to or lessees of single party lines at said rate of one dollar ($1.00) per day, shall, for the purposes of this section, be deemed subscribers to measured service.

Every subscriber to measured service shall also be furnished with as many single party lines at the same premises as he may demand, in addition to the first single party line of any kind he contracts for, without contracting to use or pay for any particular number of outgoing conversations or messages per quarter at the rate of six dollars ($6.00) per quarter for each line. The outgoing messages used over such additional line or lines shall be accounted and paid for as a part of the total messages from the subscriber's premises.

Every subscriber or lessee who is furnished with single party lines in addition to his first single party line under

the above mentioned yearly guarantees, or at the above mentioned rate of six dollars ($6.00) per quarter, may use each or any or all of his lines wholly for incoming messages or wholly for outgoing messages, or for both, as he may elect.

Subscribers or lessees to measured service contracting for two or more single party lines at measured rates at the same premises shall be furnished, if they desire, without additional charge, private branch exchange switching apparatus, appliances and equipment, including an operator's telephone, but a charge of one dollar and fifty cents ($1.50) per quarter may be made for each terminal telephone connected with the private branch exchange switching apparatus upon the same premises.

In computing the amount due to the Company from any subscriber for the total number of outgoing conversations or messages transmitted during any year at message rates, by means of more than one single party line, from the same premises, the same rates per message transmitted shall be charged in such computation as would be charged if said total number of outgoing messages had been transmitted over one single party line. The Chicago Telephone Company shall make no charge to any lessee, subscriber or patron for any incoming conversation or message transmitted to such lessee, subscriber or patron over any line furnished [fol. 4035] under this ordinance, except for toll messages or long distance messages in cases where its lessees, subscribers or patrons consent at the time of receiving the same to pay therefor instead of the persons by whom such messages are sent.

Rates for Residence Telephones

(b) Maximum rates for telephone service furnished for the use of subscribers at their residences:

For a single party line, including all outgoing conversations or messages, $18 per quarter.

For a two-party line, including all outgoing conversations or messages, $14 per quarter.

Rates for Nickel Prepaid Service

(c) Nickel prepayment service shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel prepayment service, with outgoing messages, at 5 cents each, as follows:

One party line, at a guarantee of 20 cents per day, including four messages.

Two party line, at a guarantee of 12½ cents per day, including two and a half messages.

Two party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four party line (for residences only) at a guarantee of 5 cents per day, including one message.

When any lessee or subscriber, in making settlement with said Chicago Telephone Company at the time of collection under the guarantee above mentioned, shall pay any amount to make up a deficiency between the amount in the coin box or similar device used and the sum guaranteed, he shall be given at the time of making such deficiency payment a receipt, or some written or printed evidence showing the amount and date of such deficiency payment. At any succeeding collection or collections made within approximately sixty days after such deficiency payment, any amount found in the coin box for local messages in excess of the aomunt due under the guarantee of the subscriber or [fol. 4036] lessee shall be applied to the repayment of such deficiency payment.

It shall be the duty of the Chicago Telephone Company to make its collections from coin boxes approximately every thirty days or less.

The said Chicago Telephone Company is hereby expressly forbidden to furnish telephone service to more than four subscribers or lessees by means of a single circuit or line.

Said Chicago Telephone Company shall be obliged to furnish four-party line service only when at least two subscribers or lessees located within the limits of a single block desire such service.

(d) Public Telephone Service:

The charge for a single conversation or message from any telephone located within the City of Chicago, to any other telephone located within the City, shall not exceed 5 cents. Any charge in excess thereof shall be unlawful. Said Chicago Telephone Company is hereby expressly forbidden to authorize or permit any of its lessees, subscribers or patrons to whom it has furnished or hereafter furnishes a telephone instrument or instruments, line or lines, to charge any person more than the rate above prescribed without regard to how or where such telephone instrument or instruments, line or lines, may be installed.

Said Chicago Telephone Company shall insert a clause in every contract it makes with its lessees, subscribers or patrons, forbidding said lessee, subscriber or patron to charge more to any person than five cents for a single conversation or message transmitted from any telephone or telephones furnished or supplied to said lessee, subscriber or patron, under his contract, within the City of Chicago, to any other point within said City of Chicago.

(e) Neighborhood Exchange Service:

In addition to its telephone system extending throughout the city limits, said Chicago Telephone Company may maintain and establish local or neighborhood exchanges within its limits. Said Chicago Telephone Company shall not abolish any local or neighborhood exchange now established or maintained by it, without the consent of the City Council embodied in the form of an ordinance or resolution, and said Chicago Telephone Company, during the period of this grant, shall establish and maintain a local or neighborhood [fol. 4037] exchange in any suburban district within the city limits, if said district is North of Devon Avenue, West of Fortieth avenue, or South of 71st street, whenever the City Council shall by ordinance or resolution so direct, but said City Council shall not so direct unless there is a reasonable demand therefor in such district and unless it, or some officer of the city designated by it, shall have made a request upon said Chicago Telephone Company to establish and maintain such local or neighborhood exchange at least thirty days prior to the passage of such ordinance or resolution. Any subscriber in such an exchange may communicate with any telephone located within the city limits out-

side of the local or neighborhood exchange and served by any of the exchanges of the Company located within the City of Chicago by a message, for which a charge of not more than five cents may be made for each period of five minutes or a fraction thereof.

The rates for such local or neighborhood exchange service, including all outgoing local conversations or messages, under yearly contracts, shall not exceed the following:

	Business	Residence
One-party line	$4.00 per month	$3.00 per month
Two-party line	3.00 per month	2.00 per month
Four-party line	2.00 per month	1.50 per month

But said Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone within the City of Chicago served by the lines or system of the Chicago Telephone Company in the City of Chicago and not served by any neighborhood exchange to any other telephone located within the City of Chicago served by said system, or by one of said neighborhood or local exchanges. The Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone served by one of said neighborhood exchanges to any other telephone whatsoever located within the area or district lying within the boundaries or limits of said neighborhood exchange and served by any of the exchanges of said Chicago Telephone Company located within the City of Chicago. Any lessee or subscriber to both a line or lines served by a neighborhood or local exchange, and a line or lines connected with a private branch exchange switchboard upon the same premises served by any other exchange, shall have the right, without extra charge therefor, to have all the said lines connected into said private branch exchange switchboard.

(f) Toll Service:

[fol. 4038] Said Chicago Telephone Company shall not charge more than 10 cents for each conversation or message, up to three minutes in duration (and not more than 5 cents for each additional minute), transmitted from any telephone located within the City of Chicago to any other telephone which is located outside of the City of Chicago,

but with fifteen (15) miles of the present city hall in said City of Chicago, or within one mile of the city limits and within the State of Illinois.

(g) Meters on Measured Service Lines:

The Chicago Telephone Company shall install in connection with each measured service line of its lessees and subscribers a meter which shall prove effective in actual use for accurately and correctly recording the number of outgoing messages or conversations over said line, and at any time that a practicable meter for use upon the premises of the lessee or subscriber in connection with such line shall be devised and prove effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, the Company shall install the same in connection with each line of its lessees of and subscribers to measured service upon their premises.

If any queston shall arise as to whether any meter or meters hereinabove provided for shall reasonably protect the lessee or subscriber in the counting of outgoing messages, or as to whether or not a practicable meter for use upon the premises of the lessee or subscriber to a measured service line has been devised and proved effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, such question or questions shall be submitted to the Chairman of the Finance Committee of the City Council, the Commissioner of Public Works and the Corporation Counsel, who shall together hear such facts as may be presented by the parties to the controversy, and they, or a majority of them, are hereby given the power to decide such question or questions, and to require said Chicago Telephone Company to make such changes in any meter or meters, or the method of operating the same, as they shall deem reasonably necessary to protect the lessees and subscribers of said Chicago Telephone lessees, subscribers, patrons or users unless a constallation by said company of a new meter or meters for use upon the premises of the lessees and subscribers, and to take any other action in the premises which they shall deem reasonably necessary to protect the lessees and subscribers of said company.

The Chicago Telephone Company shall not make any [fol. 4039] charge for a conversation or message to its tele-

phone lessees, subscribers, patrons or users unless a conversation or message has been actually transmitted, except in cases herein expressly provided.

(h) Extension Telephones:

Said Chicago Telephone Company shall furnish to any of its lessees, subscribers or patrons upon demand, at least three extension telephones for each line used by the lessee, subscriber or patron and located in the same premises with the principal telephone of the lessee, subscriber or patron, at not exceeding fifty (50) cents per month for each extension telephone, including necessary wires and an appropriate signaling device, provided that the company shall not be compelled to furnish more than one extension telephone to each lessee, subscriber or patron served by a four-party line.

(i) Telephone Directory:

Said Chicago Telephone Company shall, at least three times during each year, print, publish, furnish and deliver to each of its lessees and subscribers in Chicago, free of charge, a directory containing in alphabetical order the names, addresses and telephone numbers of all its lessees and subscribers in Chicago who have not requested in due time that their names be omitted. Said Chicago Telephone Company shall also when requested at the times before mentioned furnish and deliver to each of its lessees and subscribers an additional directory for each extension telephone contracted or paid for by said lessee or subscriber. Said Telephone Company shall include and list in each of the said directories, at the request or with the consent of any of its lessees or subscribers, in connection with the address and telephone number of such lessee or subscriber, free of charge, the names, in their proper alphabetical order, of not more than three partners, officers, employes or members of the family of such lessee or subscriber for each single or two-party line, contracted for by such lessee or subscriber, and make one such free listing for each four-party line and for each neighborhood exchange telephone, and also one more of such names for each extension telephone used by the said lessee or subscriber, and, in addition thereto, as many more of said names of users on the same premises as said lessee or subscriber (unless said lessee or

subscriber is the lessee of or subscriber to a flat rate single party line at $125 per year) may request, or consent to, upon payment to the Chicago Telephone Company of not more than $3.00 per annum for each additional name so included and listed.

[fol. 4040] (j) Private Lines and Extensions:

Said Chicago Telephone Company shall furnish upon demand to any of its lessees or subscribers a line or lines, connected with a switchboard, terminal or extension telephone or telephones, located outside of and beyond the premises of said lessee or subscriber, and with the switchboard, terminal or extension telephone or telephones located, upon the premises of said lessee or subscriber. So long as said terminal or extension telephone or telephones shall be located within one-half mile of said premises measured by the most direct street distance, said Company shall charge at the rate of not to exceed $5.00 per quarter year, and for each additional one-quarter mile, or fraction thereof, which said terminal or extension telephone or telephones is or are distant from said premises said Company may charge not to exceed the rate of $2.50 per quarter year.

Said Chicago Telephone Company shall also furnish private telephone lines or wires not connected with any switchboard and connecting any two points within the city limits which are not more than one mile part, measured by the most direct street distance, at the rate of $10.00 each per quarter year, and for each additional quarter mile, or fraction thereof, between said points, measured as aforesaid, said Chicago Telephone Company may charge not to exceed $2.50 per quarter year.

Said Chicago Telephone Company shall furnish terminal or extension telephones to be connected with any switchboard or wire hereinabove referred to at the rate of not to exceed $1.50 each per quarter year.

(k) Rates Defined:

All rates, prices or charges for telephone service, facilities or equipment herein prescribed, are maximum rates only, and nothing herein shall be construed as an admission of the City of Chicago that such maximum rates are reasonable or proper rates.

It is understood that reconstruction and additions must be done and made to the said Company's system in Chicago after the taking effect of this ordinance before the telephone service and equipment can be adjusted to all the service requirements subscribers may make of the Company under this ordinance. Such changes and additions shall be completed within eighteen months after this ordinance goes into effect.

* * * * * * *

[fol. 4041] 9. *Rate Agreements and Division of Territory Forbidden—Revocation of Privileges—Rights Assignable.*—The said Chicago Telephone Company shall not at any time enter into any agreement or combination with any other company heretofore existing or hereafter created concerning the price to be charged by said Chicago Telephone Company in the City of Chicago for telephone service or equipment, nor shall said Chicago Telephone Company make any transfer or division of territory, streets, avenues, alleys or public ways of the City, with any other company or corporation doing or proposing to do any kind of telephone business in said City of Chicago, and any violation of the provisions of this section shall authorize and entitle the City to repeal this ordinance, which repeal shall revoke all the rights and privileges hereby granted; provided that the rights and privileges granted to the Chicago Telephone Company under this ordinance may pass to any legal successor to said Company except a competitor in the telephone business by assignment, mortgage or otherwise, subject to all the terms and conditions of said ordinance, and said successor or successors shall file with the City Clerk its acceptance of said terms and conditions."

[fol. 4042] EXTRACTS FROM EXHIBIT NO. D-16

Pamphlet—Proceedings of City Council—Chicago—Nov. 6, 1907

* * * Right to purchase Plant Reserved by City—Priced Fixed by Appraisers.

The City of Chicago shall have the right on the first day of January, 1919, or on the first day January, 1924, or

within thirty (30) days after either of said dates, if it shall so elect, to terminate the grant of privileges of said Chicago Telephone Company conferred hereby, and on either of the said dates, or at the expiration of the term hereof, or within thirty (30) days after either of the times mentioned, to take over for municipal, state or federal operation the plant and system of the grantee, or its successor or successors, including the property hereinafter mentioned; provided that twelve (12) months' previous notice in writing shall have been given of the intention of the City to take over the telephone plant and system of the grantee, or its successor or successors, within the City of Chicago, including all appurtenances, appliances, equipment, lines, leaseholds, buildings, stores, furniture and fixtures, suitable to and used by it for the purposes of this grant, taking into consideration the then condition of the art, and in the event that the City Council shall so terminate this grant, or that said grant shall have expired, and the City Council shall take over the property of said company above mentioned, then the City shall pay therefor in cash the then cost of the duplication, taking into consideration the then condition of the art, less depreciation, of said telephone plant and system and other property aforesaid, together with, if the said grant shall not then have expired, five per cent (5%) thereon in addition as compensation for the compulsory sale, but there shall be no allowance for earning power, or for the value of the rights and privileges hereby granted, [fol. 4043] or for any franchise or license value.

In the event that the City shall desire to purchase the property of the Company within the City of Chicago, as aforesaid, the purchase price of said property shall be determined by appraisement as follows:

One appraiser shall be appointed by the City in such manner as the City Council shall direct; one shall be appointed by the Company and a third shall be appointed by the two so selected. Either party may appoint its appraiser at any time after the giving of the notice of intention to take over the telephone plant and system of the grantee, and serve written notice of such appointment upon the other party, and said other party within thirty (30) days after service of notice of such appointment shall appoint its appraiser and serve written notice of such appointment

upon the other party; whereupon the two appraisers so appointed shall appoint a third appraiser.

In the event that the party first receiving the notice of the selection of an appraiser by the other party, shall refuse or fail to appoint an appraiser and give notice thereof as above provided, or in the event that the two appraisers first appointed shall fail to agree upon a third appraiser within thirty (30) days after the giving of notice of the appointment of the second appraiser, either party, upon giving a written notice of ten (10) days to be other party, may apply to the then Judges of the Appellate Court for the First District of Illinois, or a majority of the Judges of the said Appellate Court, for the appointment of an appraiser, and if the appraiser appointed by the Judges of the said Court, or by a majority of them, shall be the second appraiser, then the third appraiser shall be selected by the two appraisers, or if they fail to agree, by the said Judges of the said court, or a majority of them, in the manner hereinbefore provided, and any appraiser or appraisers appointed by said Judges, or a majority of them, shall have [fol. 4044] the same powers and duties as if regularly appointed in the manner as first hereinabove provided.

The appraisers shall determine what tangible property, real and personal, owned by the said Company and used for the purposes of this grant is reasonably required for its continued operation, taking into consideration the then condition of the art, and in determining the fair cash value of said property they shall not take into consideration its earning power, or the value of the rights or privileges hereby granted, or the value of any license or franchise, but shall allow for the property the then cost of duplication, taking into consideration the then condition of the art, less depreciation. In considering the cost of duplication of underground conduits, wires, cables, electrical conductors and any other underground construction located in any street, alley or other public way which was or were placed therein at a time when such street, alley or other public way was unpaved, the said appraisers shall not take into consideration the cost and expense of removing or replacing any paving, or part thereof, in such street, alley or other public way. An award in writing, signed by a majority of the appraisers, shall be valid and binding upon the parties.

Within ninety (90) days after the making of said written award by the said apraisers, or a majority of them, the Chicago Telephone Company shall cause to be duly made, executed and delivered proper bills of sale and deeds of the said telephone plant and system and tangible property covered by said award, and the City of Chicago, upon the delivery of said bills of sale and deeds, and the delivery of, or the transfer of control over, said telephone plant and system and tangible property, shall make payment in cash therefor, as hereinbefore provided.

If said award shall not have been made until after the date named in the written notice given by the City of its intention to take over the telephone plant and system of the [fol. 4045] grantee, or its successor or successors, as hereinbefore provided, such delay on the part of the said appraisers, or a majority of them, in making their award, shall not affect the right of the City of Chicago to take over the said telephone plant and system and tangible property of the Chicago Telephone Company.

Said City of Chicago shall pay the expenses and charges of the said appraisers for their services under a contract which shall be authorized by the City Council and entered into by each of said appraisers at the time of his appointment. Such contract shall not allow to each of said appraisers more than one hundred dollars per day as compensation, and shall bind them to complete their award within a stipulated time, or be subject to a specified reduction per day in compensation. Such contract shall also forbid any of the said appraisers from contracting for or accepting any other or additional compensation for his or their services (from any person, firm or corporation) except that provided in said contract. The other terms of said contract shall be such as may meet the approval of the City Council. Provided, that the City of Chicago may deduct from the purchase price fixed by said award one-half of the total amount paid as the total expenses and charges of said appraisal.

The appraisers selected in the manner aforesaid, or a majority of them, shall have and may exercise at all times the right to make a complete examination of the records, books of account, vouchers, bills, contracts and documents of said Company, for the purpose of fully informing themsevles as to the actual cost, value and depreciation of the

plant and system of said Company, including all appurtenances, appliances, equipment, lands, leaseholds, buildings, stores, furniture and fixtures and other property.

Any vacancy or vacancies occurring at any time in said Board of Appraisers by death, resignation, disqualification or inability to act, may be filled within fifteen days, by the party or body making the original appointment, and if not [fol. 4046] so filled, by the Judges of said court, or a majority of them, upon the application of either party hereto, provided five days' previous notice in writing of such application shall have been given to the other party.

The Chicago Telephone Company by the filing of the acceptance hereinbefore provided for shall be understood as granting and does hereby grant to the City of Chicago, and the said City of Chicago hereby reserves to itself the right to designate any person, firm or corporation having lawful authority to acquire, own and operate a telephone line or lines or a system in said City of Chicago (hereinafter called the "licensee") who or which shall have the right to purchase the plant, system, rights and property of said Chicago Telephone Company at the expiration of the term of this grant, or within thirty (30) days thereafter, in the same manner which the City hereunder has the right to purchase the same within such time, and any person, firm or corporation so designated by said City of Chicago as licensee twelve or more months prior to the expiration of this grant shall for all the purposes of this section stand in the position of said City of Chicago. The right of the licensee of said City of Chicago to acquire said telephone plant, system, rights and property by purchase under the provisions of this ordinance shall in no way be impaired or diminished by any lack of authority or power on the part of the City of Chicago itself to acquire the said telephone plant, system, rights and property for municipal or other use and operation.

Nothing in this section, however, shall have the effect, or be construed to have the effect of lessening or limiting the rights of the City of Chicago to alter, change or reduce the charges, rates, tolls or other compensation to be charged by said licensee in the operation of said plant and system, or of lessening or limiting any of the authority, power or right reserved by said City of Chicago to itself by this ordinance, or of changing, lessening or limiting any

of the duties, obligations or restrictions imposed by this [fol. 4047] ordinance upon the grantee.

Nothing in this ordinance shall have the effect or be construed to have the effect of extending so far as the licensee is concerned, the term of this grant beyond January 7, 1929. Upon the purchase of said plant, system, rights and property under the provisions of this section either by the City of Chicago, or by any licensee of said City, all the rights of said Chicago Telephone Company, its licensee or assigns, in or to said plant, system, rights and property, or any part or parts thereof, or the operation thereof, or receipts therefrom, shall wholly cease and determine. If at the expiration of this grant the City shall not have elected to purchase the plant, system and other property of said Company hereinbefore mentioned, and shall not have designated any licensee, the failure on the part of the City to purchase or elect to purchase, or elect to designate a licensee, shall not be construed as an extension of this grant, or any of the rights and privileges hereby granted.

The authority, powers, privileges and rights by this section reserved by and granted to the City of Chicago to itself purchase the plant, system and property of said Chicago Telephone Company are so reserved and granted upon the understanding that they and each of them may be exercised only if at the time said City of Chicago seeks to exercise the same, or any of them, it shall possess the charter power so to do. But said Chicago Telephone Company by the acceptance of this ordinance shall be [redacted] precluded from in any manner attacking [redacted] the power of the City of Chicago to exer[redacted]ority, powers, privileges and rights hereby res[redacted]nted, or any of them.

[fol. 4048] EXTRACTS FROM EXHIBIT D-18.

"An ordinance fixing the maximum rates for telephone service in the city of Chicago which may be charged by the Chicago Telephone Company for a period of five years from and after the passage of this ordinance and its acceptance by the Chicago Telephone Company, and for other purposes appearing in the ordinance (passed by the city council of the city of Chicago, May 26, 1913,

pages 625 to 638, inclusive, of the journal of the proceedings of said date

* * * * * * * *

Section 2. Maximum Rates Fixed—Service and Equipment.—For a period of five years from and after the passage of this ordinance and its acceptance by the Chicago Telephone Company as hereinafter provided, said Chicago Telephone Company shall furnish upon demand telephone service of any of the classes or kinds mentioned in this section, in the City of Chicago, without discrimination, at the same rates, to all persons, firms and corporations who shall elect to take or use any of such classes or kinds of service, and shall not charge its present or future lessees, subscribers or patrons within the City of Chicago rates for telephone service, under yearly contracts payable monthly, in excess of the following maximum rates:

Measured Rate Service

(a) Maximum rates for telephone service furnished for the use of subscribers and their employes in their business:

For a single party line, including nine hundred and sixty outgoing conversations or messages over said line, $48 for each period of one year.

For the next two hundred and forty outgoing conversations or messages, or any part thereof, during the year, 5 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

For a single party line, including twelve hundred [fol. 4049] outgoing conversations or messages over said line, $60 for each period of one year.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

(b) Maximum rates for telephone service furnished for the use of subscribers at their residences:

For a single party line, including eight hundred outgoing conversations or messages over said line, $40 for each period of one year.

For the next four hundred outgoing conversations or messages, or any part thereof, during the year, 4 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

Every subscriber to measured service who will contract to use or pay for seventy-two hundred outgoing conversations or messages during the year at the above rates per message shall be furnished at the same premises with a second single party line without extra charge, and every subscriber shall be furnished with an additional single party line at such premises, without extra charge, for each six thousand outgoing conversations or messages from such premises he will contract to use or pay for, in addition to said seventy-two hundred, during the year at the rate of 2 cents each.

Every subscriber to measured service shall also be furnished with as many single party lines at the same premises as he may demand, in addition to the first single party line of any kind he contracts for, without contracting to use or pay for any particular number of outgoing conversations or messages per quarter at the rate of six dollars ($6.00) per quarter for each line. The outgoing messages used over such additional line or lines shall be accounted and paid for as a part of the total messages from the subscriber's premises.

[fol. 4050] Every subscriber or lessee who is furnished with single party lines in addition to his first single party line under the above mentioned yearly guarantees, or at the above mentioned rate of six dollars ($6.00) per quarter,

may use each or any or all of his lines wholly for incoming messages or wholly for outgoing messages, or for both, as he may elect.

Subscribers or lessees to measured service contracting for two or more single party lines at measured rates at the same premises shall be furnished, if they desire, without additional charge, private branch exchange switching apparatus, appliances and equipment, including an operator's telephone, but a charge of one dollar and fifty cents ($1.50) per quarter may be made for each terminal telephone connected with the private branch exchange switching apparatus upon the same premises.

In computing the amount due to the Company from any subscriber for the total number of outgoing conversations or messages transmitted during any year at message rates, by means of more than one single party line, from the same premises, the same rates per message transmitted shall be charged in such computation as would be charged if said total number of outgoing messages had been transmitted over one single party line. The Chicago Telephone Company shall make no charge to any lessee, subscriber or patron for any incoming conversation or message transmitted to such lessee, subscriber or patron over any line furnished under this ordinance, except for toll messages or long distance messages in cases where its lessees, subscribers or patrons consent at the time of receiving the same to pay therefor instead of the persons by whom such messages are sent.

From and after the passage of this ordinance, and its acceptance by the Chicago Telephone Company as hereinafter provided, said Company shall not furnish with the right to transmit outgoing conversations or messages without limit and without any charge for conversation or message, a single party business line or lines at the rate of one dollar ($1.00) or at any other rate per day each: provided, however, that present subscribers to said class of service shall have the right to a continuance thereof at their present or any future location within the City at the rate and upon the conditions prescribed and fixed therefor in said ordinance of November 6, 1907, subject to the terms and conditions of said ordinance.

(c) Flat Rate Service:

For a single party line for the use of subscribers at their residences, including all outgoing conversations or messages, $18 per quarter.

For a two-party line for the use of subscribers at their [fol. 4051] residences, including all outgoing conversations or messages, $14 per quarter.

For a single party line for the use of subscribers and their employes in their business, including not to exceed five hundred (500) outgoing conversations or messages, in any one month, ten dollars and forty-two cents ($10.42) per month, and for all outgoing conversations or messages in excess of five hundred in any one month, 2 cents each; provided, however, that present subscribers to a single party business line, with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year, shall have the right to a continuance thereof at their present or any future location within the City, at the rate and upon the conditions prescribed and fixed for said class of service in said ordinance of November 6, 1907, and, provided further, that all persons applying for said last mentioned class of service upon the Company's regular form of application before this ordinance goes into effect shall be entitled to have said class of service at the rate and upon the conditions prescribed and fixed for said class of service in said ordinance of November 6, 1907.

If any present subscriber to a single party business line, with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year, be compelled, by fire or other cause beyond the control of such subscriber, to temporarily suspend business involving the discontinuance of his telephone service, then upon the resumption of his business within six months after such discontinuance begins he shall have the right to be furnished, at his old or any new address, with the same class of service that was being furnished him at the time of the discontinuance of his business, towit, a single party business line with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year.

Rates for Nickel Coin Box Service

Nickel Prepayment or Nickel First Service

(d) Nickel first service, where the nickel must be deposited to call the operator, shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel first service, with outgoing messages for each of which a five-cent piece must be deposited in the coin box, slot or similar device for receiving five-cent pieces, as follows:

[fol. 4052] One-party line, at a guarantee of 20 cents per day, including four messages.

Two-party line, at a guarantee of 12½ cents per day, including two and one-half messages.

Two-party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four-party line (for residences only) at a guarantee of 5 cents per day, including one message.

Additional messages in excess of the guaranteed number per day in each of the foregoing nickel first classes, 4 cents each.

The Chicago Telephone Company, in making settlement with the lessee or subscriber, at the time of collection shall allow said lessee or subscriber 1 cent for each message in excess of the total guaranteed number of messages since the last preceding collection settlement.

The Chicago Telephone Company shall, as hereinafter provided, install with each nickel first telephone located in a residence a push button or other device which will enable the subscriber, in an emergency, to call the operator without the deposit of a nickel. After six months from the taking effect of this ordinance, said push button or other device shall be installed on all such residence telephones in connection with new installations, moves and changes; within eighteen months after the taking effect of this ordinance the said push button or other device shall be supplied to all nickel first residence users requesting it, and within two years after the taking effect of this ordinance all nickel first residence telephones shall be equipped with said push button or other device.

Where the Company's equipment and facilities will not permit of the installation of nickel first service, the Company shall temporarily install nickel last service, if so requested by the subscriber.

Nickel on Request or Nickel Last Service

(e) Nickel last service, where the nickel must be deposited in the coin box, slot or similar device for receiving five-cent pieces immediately upon the request of the operator, shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel last service, with outgoing messages, at 5 cents [fol. 4053] each, as follows:

One-party line, at a guarantee of 20 cents per day, including four messages.

Two-party line, at a guarantee of 12½ cents per day, including two and a half messages.

Two-party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four-party line (for residences only) at a guarantee of 5 cents per day, including one message.

Subscribers to nickel last service shall be entitled to nickel first rates as provided in subdivision (d) hereof within thirty (30) days after signing an application to the Company for change in service to nickel first, and the Company will change the equipment and service from nickel last to nickel first in such cases as soon as practicable; and within approximately thirty (30) days after the passage and acceptance by the Company of this ordinance the Company shall present to every nickel last subscriber an application blank, to be signed by every subscriber desiring nickel first service.

(f). When any lessee or subscriber, in making settlement with said Chicago Telephone Company at the time of collection under the nickel first and the nickel last guarantees above mentioned, shall pay any amount to make up a deficiency between the amount in the coin box or similar device used and the sum guaranteed, he shall be given at the time of making such deficiency payment a receipt or some written or printed evidence showing the amount and date

of such deficiency payment. At any succeeding collection or collections made within approximately sixty (60) days after such deficiency payment, any amount found in the coin box for local messages in excess of the amount due under the guarantee of the subscriber or lessee shall be applied to the repayment of such deficiency payment.

If at the time of any collection under the nickel first and nickel last guarantees above mentioned the Chicago Telephone Company shall collect from the coin box or similar device used, an amount which (together with the amount, if any, paid by the lessee or subscriber at the time such collection is made on account of slugs or other tokens found in the coin box or similar device used) shall exceed the amount guaranteed by the lessee or subscriber, he shall be given a receipt or some written or printed evidence at the time such collection is made showing the amount and date of such collection in excess of the amount guaranteed; and if at any succeeding collection or collections made within [fol. 4054] approximately sixty (60) days thereafter there shall be a deficiency between the amount in the coin box or similar device and the sum guaranteed, then the amount collected within approximately sixty (60) days preceding such deficiency collection or collections in excess of the amount guaranteed shall, so far as it will extend, be applied in payment or partial payment of such deficiency or deficiencies.

It shall be the duty of the Chicago Telephone Company to make its collections from coin boxes approximately every thirty (30) days or less.

The said Chicago Telephone Company is hereby expressly forbidden to furnish telephone service to more than four subscribers or lessees by means of a single circuit or line.

Said Chicago Telephone Company shall be obliged to furinsh four-party line service only when at least two subscribers or lessees located within the limits of a single block desire such service.

(g) Public Telephone Service:

The charge for a single conversation or message from any telephone located within the City of Chicago, to any other telephone located within the City, shall not exceed 5 cents. Any charge in excess thereof shall be unlawful. Said Chicago Telephone Company is hereby expressly forbidden

to authorize or permit any of its lessees, subscribers or patrons to whom it has furnished or hereafter furnishes a telephone instrument or instruments, line or lines, to charge any person more than the rate above prescribed without regard to how or where such telephone instrument or instruments, line or lines, may be installed.

Said Chicago Telephone Company shall insert a clause in every contract it makes with its lessees, subscribers or patrons, forbidding said lessee, subscriber or patron to charge more to any person than five cents for a single conversation or message transmitted from any telephone or telephones furnished or supplied to said lessee, subscriber or patron, under his contract, within the City of Chicago, to any other point within said City of Chicago.

(h) Neighborhood Exchange Service:

In addition to its telephone system extending throughout the city limits, said Chicago Telephone Company may maintain and establish local or neighborhood exchanges within its limits. Said Chicago Telephone Company shall not abolish any local or neighborhood exchange now established or maintained by it, without the consent of the City Council embodied in the form of an ordinance or resolution, [fol. 4055] and said Chicago Telephone Company, during the period of the grant made in said ordinance of November 6, 1907, shall establish and maintain a local or neighborhood exchange in any suburban district within the city limits, if said district is North of Devon avenue, West of Fortieth avenue, or South of 71st street, whenever the City Council shall by ordinance or resolution so direct, but said City Council shall not so direct unless there is a reasosable demand therefor in such district and unless it, or some officer of the City designated by it, shall have made a request upon said Chicago Telephone Company to establish and maintain such local or neighborhood exchange at least thirty days prior to the passage of such ordinance or resolution. Any subscriber in such an exchange may communicate with any telephone located within the city limits outside of the local or neighborhood exchange and served by any of the exchanges of the Company located within the City of Chicago by a message, for which a charge of not more than five cents may be made for each period of five minutes or a fraction thereof.

The rates for such local or neighborhood exchange service, including all outgoing local conversations or messages, under yearly contracts, shall not exceed the following:

	Business Per Month	Residence Per Month
One party line	$4.00	$3.00
Two party line	3.00	2.00
Four party line	2.00	1.50

But said Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone within the City of Chicago served by the lines or system of the Chicago Telephone Company in the City of Chicago and not served by any neighborhood exchange to any other telephone located within the City of Chicago served by said system, or by one of said neighborhood or local exchanges. The Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone served by one of said neighborhood exchanges to any other telephone whatsoever located within the area or district lying within the boundaries or limits of said neighborhood exchange and served by any of the exchanges of said Chicago Telephone Company located within the City of Chicago. Any lessee or subscriber to both a line or lines served by a neighborhood or local exchange, and a line or lines connected with a private branch exchange switchboard upon the same premises served by any other exchange, shall have the right, without extra charge therefor, to have all the said lines connected into said private branch exchange switchboard.

[fol. 4056] (i) Toll Service:

Said Chicago Telephone Company shall not charge more than 10 cents for each conversation or message, up to three minute in duration (and not more than 5 cents for each additional minute), transmitted from any telephone located within the City of Chicago to any other telephone which is located outside of the City of Chicago, but within fifteen (15) miles of the present city hall in said City of Chicago, or within one mile of the city limits and within the State of Illinois. Provided, however, that said Chicago Telephone Company shall not charge more than 5 cents for each three minute conversation or message (and not more than 5 cents

for each additional three minutes or fraction thereof) between Austin and Oak Park; between Rogers Park and Evanston; between Lawndale and Morton Park; between Longwood and Evergreen Park; between Mont Clare and River Grove, and between Mont Clare and Oak Park; and said Chicago Telephone Company shall have the right to apply the same rate between other contiguous places just within and just without the city limits when conditions, in its opinion, may justify the charge of said 5 cent rate.

(j) Meters on Measured Service Lines:

The Chicago Telephone Company shall install in connection with each measured service line of its lessees and subscribers a meter which shall prove effective in actual use for accurately and correctly recording the number of outgoing messages or conversations over said line. At the request of any subscriber to a single party measured service line not connected with a private branch exchange, or any subscriber to a single party line for the use of subscribers and their employes in their business, including not to exceed five hundred (500) outgoing conversations or messages in any one month, for ten dollars and forty-two cents ($10.42) per month, and for all outgoing conversations or messages in excess of five hundred in any one month, at 2 cents each, the Company shall install upon the premises of such subscriber a meter or meters which shall accurately and correctly record the number of outgoing messages or conversations over said line at a charge not to exceed three dollars ($3.00) for each meter, and if any subscriber shall at any time notify the Company in writing to remove any such meter the Company shall remove the same within ten (10) days thereafter and shall refund to such subscriber one dollar ($1.00) for each meter so removed, and at any time that a practicable meter for use upon the premises of the lessee or subscriber in connection with a single party measured service line connected with a private branch exchange shall be devised and prove effective in actual use [fol. 4057] for accurately and correctly recording outgoing messages or conversations over said line, the Company, at the request of any such lessee or subscriber, shall install such meter upon the premises of such lessee or subscriber in connection with each such line, at a charge not to exceed three dollars ($3.00) for each meter, and if any subscriber

shall at any time notify the Company in writing to remove any such meter the Company shall remove the same within ten (10) days thereafter and shall refund to such subscriber one dollar ($1.00) for each meter so removed.

If any question shall arise as to whether any meter or meters hereinabove provided for shall reasonably protect the lessee or subscriber in the counting of outgoing messages, or as to whether or not a practicable meter for use upon the premises of the lessee or subscriber to a measured line has been devised and proved effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, such question or questions shall be submitted to the Chairman of the Finance Committee of the City Council, the Commissioner of Public Works and the Corporation Counsel, who shall together hear such facts as may be presented by the parties to the controversy, and they, or a majority of them, are hereby given the power to decide such question or questions, and to require said Chicago Telephone Company to make such changes in any meter or meters, or the method of operating the same, as they shall deem reasonably necessary to protect the lessees and subscribers of said Chicago Telephone Company to measured service, and to require the installation by said Company of a new meter or meters for use upon the premises of the lessees and subscribers, and to take any other action in the premises which they shall deem reasonably necessary to protect the lessees and subscribers of said Company.

The Chicago Telephone Company shall not make any charge for a conversation or message to its telephone lessees, subscribers, patrons or users unless a conversation or message has been actually transmitted, except in cases herein expressly provided.

(k) Extension Telephones:

Said Chicago Telephone Company shall furnish to any of its lessees, subscribers or patrons upon demand, at least three extension telephones for each line used by the lessee, subscriber or patron and located in the same premises with the principal telephone of the lessee, subscriber or patron, at not exceeding fifty (50) cents per month for each extension telephone, including necessary wires and an approprite signaling device, provided that the Company shall not be compelled to furnish more than one extension tele-

phone to each lessee, subscriber or patron served by a four-party line.

[fol. 4058] (1) Telephone Directory:

Said Chicago Telephone Company shall, at least three times during each year, print, publish, furnish and deliver to each of its lessees and subscribers in Chicago, free of charge, a directory containing in alphabetical order the names, addresses and telephone numbers of all its lessees and subscribers in Chicago who have not requested in due time that their names be omitted. Said Chicago Telephone Company shall also when requested at the times before mentioned furnish and deliver to each of its lessees and subscribers an additional directory for each extension telephone contracted or paid for by said lessee or subscriber. Said Telephone Company shall include and list in each of the said directories, at the request or with the consent of any of its lessees or subscribers, in connection with the address and telephone number of such lessee or suberiber, free of charge, the names, in their proper alphabetical order, of not more than three partners, officers, employes or members of the family of such lessee or subscriber for each single or two-party line, contracted for by such lessee or subscriber, and make one such free listing for each four-party line and for each neighborhood exchange telephone, and also one more of such names for each extension telephone used by the said lessee or subscriber, and, in addition thereto, as many more of said names of users on the same premises as said lessee or subscriber (unless said lessee or subscriber is the lessee of or suberiber to a flat rate single party line at $125 per year) may request, or consent to, upon payment to the Chicago Telephone Company of not more than $3.00 per annum for each additional name so included and listed.

The Chicago Telephone Company shall publish in every issue of its Chicago telephone directory all rates for local exchange service and all rules and regulations affecting the subscribers, and shall embody said rates, rules and regulations in a folder to be given to any lessee or subscriber on application at the offices of the company.

(m) Private Lines and Extensions:

Said Chicago Telephone Company shall furnish upon demand to any of its lessees or subscribers a line or lines, connected with a switchboard, terminal or extension tele-

phone or telephones, located outside of and beyond the premises of said lessee or subscriber, and with the switchboard, terminal or extension telephone or telephones located upon the premises of said lessee or subscriber. So long as said terminal or extension telephone or telephones shall be located within one-half mile of said premises measured by the most direct street distance, said company shall charge at the rate of not to exceed $5.00 per quarter year, [fol. 4059] and for each additional one-quarter mile, or fraction thereof, which said terminal or extension telephone or telephones is or are distant from said premises said company may charge not to exceed the rate of $2.50 per quarter year.

Said Chicago Telephone Company shall also furnish private telephone lines or wires not connected with any switchboard and connecting any two points within the city limits which are not more than one mile apart, measured by the most direct street distance, at the rate $10.00 each per quarter year, and for each additional quarter mile, or fraction thereof, between said points, measured as aforesaid, said Chicago Telephone Company may charge not to exceed $2.50 per quarter year.

Said Chicago Telephone Company shall furnish terminal or extension telephones to be connected with any switchboard or wire hereinabove referred to at the rate of not to exceed $1.50 each per quarter year.

(n) In all cases where the Chicago Telephone Company has furnished telephone service without change in line on the premises of the subscriber or in equipment or class of service continuously at one address and in the same name for one year or more, there shall be no charge made if the service is moved from said address to another address within the limits of the Chicago Exchange. Such removal, without charge, shall constitute an express extension of the subscriber's contract for a period of one year from the completion of the removal.

If a subscriber's telephone service has not been in service for one year in the same name without change in line on the premises of the subscriber, or in equipment or class of service, the following charges may be made:

1. For a change from one address to another, not to exceed five dollars ($5.00); provided, that in all cases where

there are a telephone and line which can be used without change at the new location, such charge shall not exceed one dollar ($1.00).

2. For change of location or change in style of instrument in the same premises on residence telephones, the charge shall be upon the basis of the actual cost to the company for doing the work, but not to exceed two dollars and fifty cents ($2.50).

3. For change of location or change in style of instru- [fol. 4060] ment in the same premises on other than residence telephones, the charge shall be upon the basis of the actual cost to the company for doing the work, but not to exceed five dollars ($5.00).

4. For the removal of a private branch exchange from one address to another, the charge shall be upon the basis of the actual cost to the company for doing the work,

(o) Whenever the Chicago Telephone Company has legally discontinued the service for any cause without the consent of the subscriber, it may charge not to exceed two dollars ($2.00) in each and every case of reinstatement.

(p) The Chicago Telephone Company, in addition to the classes of service and rates hereinbefore provided, is hereby authorized to supply special facilities and service at rates which are alike to all subscribers similarly situated for periods of less than one year; and to furnish appliances not a part of standard equipment, as may be arranged for between the company and its subscribers.

(q) The City Council of said City of Chicago may at any time amend sub-divisions (o) and (p) of this ordinance by striking out any portion thereof after public hearing by an appropriate committee of said City Council or other person or body designated by the City Council for that purpose and a finding that such portion of said sub-division is the cause of injury to the telephone service.

(r) Rates Defined:

All rates, prices or charges for telephone service, facilities or equipment herein prescribed, are maximum rates only, and nothing herein shall be construed as an admission of the City of Chicago that such maximum rates are reasonable or proper rates."

(Here follows side folio 4061)

EXHIBIT D-19

WESTERN ELECTRIC COMPANY, INCORPORATED

ANALYSIS OF THE COST OF SALES BY BELL AND NON-BELL CUSTOMERS
(Dollars in Thousands)

	Bell Customers											Non-Bell Cus						
						Expenses												
Year	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Me d
1916	$ 73,915	$ 6,314	$ 67,601	$ 0	$ 0	$1,227	$ 1,257	$1,933	$ 38	$ (281)	$ 71,775	$33,072	$ 5,925	$27,147	$ 0	$ 0	$ 244	$
1917	104,682	7,793	96,890	0	0	1,662	1,503	2,274	192	(364)	102,157	45,658	8,738	36,920	0	0	307	
1918	79,217	7,935	71,282	0	0	1,673	1,844	2,215	285	(503)	76,796	66,009	11,164	54,845	0	0	845	
1919	80,361	9,881	70,480	0	0	2,220	2,241	3,040	239	(546)	77,674	55,361	9,914	45,447	0	0	724	
1920	130,712	13,506	117,206	0	0	3,310	2,928	2,698	302	(587)	125,857	75,400	12,208	63,192	0	0	425	
1921	142,885	20,150	122,735	0	0	4,854	1,804	3,026	315	(987)	131,747	46,880	5,576	41,304	0	0	445	
1922	159,957	16,666	143,291	0	0	4,840	2,009	3,907	497	(949)	153,595	50,984	9,537	41,447	0	0	652	
1923	188,159	22,483	165,676	0	0	5,497	3,690	6,565	769	(230)	181,967	67,018	12,624	54,394	0	0	1,006	
1924	233,300	37,603	195,697	2,000	1,563	9,221	4,418	7,210	2,561	(245)	222,425	64,981	12,192	52,789	0	0	1,309	
1925	226,700	41,591	185,109	3,283	1,966	6,967	4,449	7,342	2,588	(1,256)	210,448	71,029	13,103	57,926	1,617 U	202	2,777	
1926	247,203	47,295	199,908	3,443	1,914	9,407	12,985	4,436	3,311	(752)	234,652	15,902	4,561	11,341	233	188	1,030	
1927	241,062	52,456	188,606	3,172	1,666	11,382	13,353	4,544	2,264	(793)	224,194	12,662	3,975	8,687	192	137	1,024	
1928	267,808	47,896	219,912	236	1,821	8,872	15,252	3,589	2,556	(724)	250,524	20,123	6,293	13,830	13	169	1,439	
1929	372,384	49,303	323,081	0	0	8,910	18,642	3,919	1,329	(869)	355,012	38,566	11,966	36,600	0	0	2,114	1
1930	338,830	48,058	290,772	0	0	12,244	19,494	4,430	1,097	(882)	327,145	22,648	5,557	17,091	0	0	1,772	1
Total	2,887,175	428,929	2,458,246	12,134	8,940	92,286	105,869	61,118	17,343	(9,968)	2,745,968	686,293	133,333	552,960	2,055	696	16,113	[illegible]

U Includes $1,400,000 Reserve for Graybar Electric Company, Inc. Pension Fund.

EXHIBIT D-19

WESTERN ELECTRIC COMPANY, INCORPORATED

ANALYSIS OF THE COST OF SALES BY BELL AND SUB-BELL CUSTOMERS
(Dollars in Thousands)

Bell Companies									Non-Bell Customers								
Expenses									Expenses								
Develop-ment	Merchan-dising	Gen-eral	Federal Taxes	Interest Received	Total Cost	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Addi-tions to Em-ployees' Benefit Fund	Addi-tional De-preci-ation of Plant	Develop-ment	Merchan-dising	Gen-eral	Federal Taxes	Interest Received	Total Cost	Year
$1,227	$ 1,287	$1,933	$ 38	$ (281)	$ 71,775	$33,072	$ 8,926	$27,147	$ 0	$ 0	$ 244	$2,976	$1,086	$ 30	$ (140)	$31,343	1916
1,662	1,508	2,274	192	(264)	103,157	45,658	8,738	36,920	0	0	307	3,483	1,499	250	(76)	42,383	1917
1,673	1,844	2,215	285	(605)	76,796	66,009	11,164	54,845	0	0	845	4,178	2,228	345	(45)	63,396	1918
2,220	2,241	3,040	239	(846)	77,674	55,361	9,914	45,447	0	0	724	4,614	1,891	228	(33)	52,672	1919
3,310	3,928	2,698	302	(867)	126,857	76,400	13,208	63,192	0	0	428	7,184	2,178	149	(178)	72,965	1920
4,854	1,804	3,026	316	(987)	121,747	46,880	5,876	41,004	0	0	448	6,244	1,739	25	(213)	49,844	1921
4,840	3,009	3,907	497	(948)	153,598	50,984	9,537	41,447	0	0	682	5,853	1,634	376	(140)	49,312	1922
5,497	3,690	6,186	789	(230)	141,967	67,018	12,624	54,394	0	0	1,008	6,179	2,226	398	(108)	64,096	1923
9,221	4,418	7,210	2,561	(248)	222,428	84,981	12,192	52,789	0	0	1,309	8,176	2,042	371	(76)	82,611	1924
6,967	4,449	7,342	2,588	(1,456)	210,448	71,029	13,108	57,926	1,617	202	2,777	6,636	2,230	508	(398)	71,701	1925
9,407	12,988	4,426	3,311	(752)	234,652	15,902	4,861	11,041	283	188	1,080	984	280	94	(14)	14,206	1926
11,382	13,385	4,844	2,264	(792)	224,194	12,648	3,978	8,687	192	137	1,084	720	413	197	(8)	11,368	1927
8,872	15,282	3,589	1,556	(724)	280,624	20,123	6,298	13,830	13	189	1,489	906	988	280	(8)	17,831	1928
8,910	18,642	3,919	1,329	(889)	355,012	38,866	11,966	26,900	0	0	2,114	1,498	1,221	765	(14)	32,177	1929
12,244	19,494	4,429	1,087	(882)	377,148	28,648	5,857	17,091	0	0	1,778	1,242	1,120	180	(6)	21,892	1930
12,286	109,869	61,118	17,242	(9,958)	2,748,988	686,282	153,353	562,980	2,056	996	16,113	58,846	32,730	3,944	(1,248)	666,622	Total

Company, Inc. Pension Fund.

[fol. 4062]

EXHIBIT D-25

Western Electric Company

Pension Fund Transactions

Year	Balance Beginning of Year	Credits for Pension Accruals Interest and Appropriations	Charges for Pensions Paid	Balance at End of Year
1906	$.....	$561,090	$2,412	$558,678
1907	558,678	22,162	4,180	576,660
1908	576,660	21,958	7,341	591,277
1909	591,277	23,343	17,126	597,494
1910	597,494	175,249	33,202	739,541
1911	739,541	79,006	31,658	786,889
1912	786,889	246,723	33,612	1,000,000
1913	1,000,000	34,887	34,887	1,000,000
1914	1,000,000	37,620	37,620	1,000,000
1915	1,000,000	44,258	44,258	1,000,000
1916	1,000,000	40,326	40,326	1,000,000
1917	1,000,000	535,785	35,785	1,500,000
1918	1,500,000	135,063	35,063	1,600,000
1919	1,600,000	45,128	45,128	1,600,000
1920	1,600,000	51,302	51,302	1,600,000
1921	1,600,000	62,807	62,807	1,600,000
1922	1,600,000	467,217	67,217	2,000,000
1923	2,000,000	72,260	72,260	2,000,000
1924	2,000,000	2,074,670	74,670	4,000,000
1925	4,000,000	3,576,605	76,605	7,500,000
1926	7,500,000	5,069,139	69,139	12,500,000
1927	12,500,000	4,984,500	86,349	17,398,151
1928	17,398,151	2,924,719	101,148	20,221,722
1929	20,221,722	5,193,790	119,563	25,295,949
1930	25,295,949	5,499,359	147,207	30,648,101

[fol. 4063]

EXHIBIT D-26

Actuarial Computations of Required Pension Accruals, 1916–1930, and Minimum Fund Required

(Dollars in Thousands)

Year	Required Pension Accruals: Amount	Required Pension Accruals: Per Cent of Pay Roll	Pensions Paid	Net Actuarial Addition (a—c)	Interest on Fund	Minimum Required Fund At End of Year
1915	$.....	.....	$.....	$.....	$.....	$1,000
1916	431	2.5	40	391	56	1,447
1917	626	2.5	36	590	81	2,118
1918	692	2.5	35	657	118	2,893
1919	705	2.5	45	660	161	3,714
1920	1,095	2.5	51	1,044	207	4,965
1921	1,414	2.5	63	1,351	277	6,593
1922	1,595	2.5	67	1,528	368	8,489
1923	2,072	2.5	72	2,000	473	10,962
1924	2,284	2.5	75	2,209	611	13,782
1925	1,804	2.5	77	1,727	768	16,277
1926	1,969	2.5	69	1,900	908	19,085
1927	2,114	2.6	86	2,028	1,064	22,177
1928	2,212	2.5	101	2,111	1,237	25,525
1929	3,948	3.0	120	3,828	1,423	30,776
1930	4,032	3.0	147	3,884	1,716	36,377

[fol. 4064]

EXHIBIT D-27

Western Electric Company, Inc.

Details of Journal Entry for Extraordinary Reserve Against Plant, December 31, 1927

	Hawthorne			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	Total
Total extraordinary depreciation based on studies to revalue Plant to estimated cost levels for the ten years 1931–1940	$1,303,280	$565,283	$2,585,470	$2,186,995	$748,452	$843,821	$8,233,301
Less:							
Excess over normal depreciation on Hawthorne's books resulting from writing back at December 31, 1924, the excess war cost of gross additions written off in the years 1917 to 1920, inclusive	$340,382	$94,049	$163,614	$.....	$.....	$.....	$598,045
Extraordinary depreciation written off to profit and loss at December 31, 1924, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 284)	.....	.....	314,810	732,463	156,334	173,742	1,377,349
Additional depreciation written off to profit and loss in 1924 for faster obsolescence on machinery (J. E. 284)	.....	.....	185,190	.....	.....	.....	185,190
Extraordinary depreciation written off to profit and loss at December 31, 1925, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 280)	209,018	.....	1,084,280	436,537	309,666	128,258	2,167,759
Extraordinary depreciation written off to current expenses at December 31, 1926, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 224)	284,442	164,146	227,318	771,188	354,306	300,455	2,101,855
Extraordinary depreciation to be written off at December 31, 1927	469,438	307,088	610,258	246,807	71,854	241,366	1,803,103
Total Extraordinary Depreciation written off	$1,303,280	$565,283	$2,585,470	$2,186,995	$748,452	$843,821	$8,233,301

[fol. 4065]

EXHIBIT D-28

Western Electric Company, Inc.

Extraordinary Reserve Against Plant

to Bring Additions to Estimated Cost Level for 1931–1940

	Year	Additions	Actual Cost Index (S) (1914—100 %)	Estimated 10 Year Index 1931–40 (S) %	Per Cent Excess	Amount of Excess
Hawthorne:						
Buildings	1917	$739,000	153	149	2.6	$19,214
	1918	529,000	166	149	10.2	53,958
	1919	538,000	161	149	7.5	40,350
	1920	1,747,000	207	149	28.0	489,160
	1921	1,269,000	177	149	15.8	200,502
	1922	520,000	156	149	4.5	23,400
	1923	1,021,000	181	149	17.7	180,717
	1924	499,000	188	149	20.7	103,293
	1925	93,000	189	149	21.2	19,716
	1926	134,000	184	149	19.0	25,460
	1927	990,000	175	149	14.9	147,510
						$1,303,280
Permanent Fixtures	1918	356,000	153	145	5.2	$18,512
	1919	263,000	158	145	8.2	21,566
	1920	485,000	177	145	18.1	87,785
	1921	914,000	167	145	13.2	120,648
	1922	340,000	146	145	.7	2,380
	1923	665,000	164	145	11.6	77,140
	1924	706,000	169	145	14.2	100,252
	1925	164,000	175	145	17.1	28,044
	1926	82,000	178	145	18.5	15,170
	1927	638,000	170	145	14.7	93,786
						$565,283
Machinery	1919	219,000	179	168	6.1	$13,359
	1920	1,829,000	223	168	24.7	451,763
	1921	2,661,000	200	168	16.0	425,760
	1922	1,794,000	187	168	10.2	182,988
	1923	1,796,000	200	168	16.0	287,360
	1924	2,658,000	194	168	16.4	356,172
	1925	835,000	203	168	17.2	143,620
	1926	904,000	208	168	19.2	173,568
	1927	3,443,000	200	168	16.0	550,880
						$2,585,470

(S) Indices furnished by Mr. Lincoln as follows:
Buildings and permanent fixtures 4–2–27.
Machinery 10–14–26, 10–19–26, 12–15–26.

[fol. 4066]

EXHIBIT D-28—Continued

Western Electric Company, Inc.

Extraordinary Reserve Against Plant

to Bring Additions to Estimated Cost Level for 1931–1940

	Year	Additions	Actual Cost Index (S) (1914—100 %)	Estimated 10 Year Index 1931–40 (S) %	Per Cent Excess	Amount of Excess
Kearny:			%	%		
Buildings	1923	$470,000	194	163	16.0	$75,200
	1924	4,135,000	206	163	20.9	864,215
	1925	3,061,000	204	163	20.1	615,261
	1926	1,271,000	210	163	22.4	284,704
	1927	1,879,000	200	163	18.5	347,615
						$2,186,995
Permanent Fixtures	1923	83,000	168	149	11.3	$9,379
	1924	902,000	178	149	16.3	147,026
	1925	2,108,000	179	149	16.8	354,144
	1926	831,000	184	149	19.0	157,890
	1927	537,000	175	149	14.9	80,013
						$748,452
Machinery	1917	.....	...	...	.....	$.....
	1918	.....	...	...	.....	.....
	1919	25,000	179	168	6.1	1,525
	1920	48,000	223	168	24.7	11,856
	1921	104,000	200	168	16.0	16,640
	1922	64,000	187	168	10.2	6,528
	1923	256,000	200	168	16.0	40,960
	1924	2,016,000	194	168	13.4	270,144
	1925	886,000	203	168	17.2	152,392
	1926	1,033,000	208	168	19.2	198,336
	1927	909,000	200	168	16.0	145,440
						$843,821

(S) Indices furnished by Mr. Lincoln as follows:
Buildings and permanent fixtures 4–2–27.
Machinery 10–14–26, 10–19–26, 12–15–26.
April 22, 1931.

[fol. 4067]

EXHIBIT D-29

B—Const. Cost Indices

W. E. Construction Cost Indices

As Prepared By Plant, Engineering Department and

General Statistical Department

1914–100

	Hawthorne Plant			Kearny Plant (NY Base=100)		
	Old G.S.D. Index	New Index Buildings Only	New Index Permanent Fixtures Only	Old G.S.D. Index	New Index Buildings Only	New Index Permanent Fixtures Only
1914	100	100	100	100	100	100
1915	103	111	101	...	...	...
1916	126	144	115	...	...	...
1917	152	153	140	...	...	...
1918	155	166	153	...	...	...
1919	162	161	158	...	...	...
1920	227	207	177	...	...	...
1921	199	177	167	...	...	...
1922	166	156	146	...	...	...
1923	196	181	164	214	194	168
1924	192	188	169	217	206	178
1925	187	189	175	207	204	179
1926	189*	184	178	213**	210	184
			Estimates			
1927	179	175	170	204	200	175
1928	173	170	165	193	190	170
1929	172	170	165	191	188	170
1930	171	168	165	185	184	170
1931	165	164	160	179	180	165
1932	162	160	157	176	176	161
1940	137	155	151	150	149	135
			Ten Year Moving Averages			
1926–35	168	155	161	185	183	166
1927–36	163	161	158	180	178	162
1928–37	160	158	155	175	174	159
1929–38	157	155	152	171	170	156
1930–39	154	152	149	168	167	153
1931–40	150	149	145	164	163	149

* Preliminary figure, as used in computations; final figure for year, 191.
** Preliminary figure, as used in computations; final figure for year, 214.
ARH:EA.
4/2/27.

[fol. 4068]

Components of Construction Costs Indices

As Prepared by Plant Engineering Department and General Statistical Department

1914=100

Hawthorne Plant

	Old G. S. D. Index		New Index, Buildings Only			New Index, Permanent Fixtures Only		
	Material	Labor	Material	Labor	Total	Material	Labor	Total
1914	100	100	100	100	100	100	100	100
1915	105	100	120	100	111	103	100	101
1916	149	103	177	102	144	125	101	115
1917	199	106	193	104	153	168	101	140
1918	200	112	202	121	166	185	110	153
1919	195	129	175	143	161	179	130	158
1920	252	202	223	187	207	186	166	177
1921	192	205	165	191	177	166	168	167
1922	174	159	153	159	156	146	144	146
1923	208	184	192	167	181	168	157	164
1924	194	189	186	191	188	163	175	169
1925	179	199	173	207	189	161	193	175
1926	178*	207*	157	217	184	159	203	178
1940 (Est.)	125	149	118	156	...	119	146	...

Kearny Plant

	Old G. S. D. Index		New Index, Buildings Only				New Index, Permanent Fixtures Only			
			Hawthorne Base		Kearny Base		Hawthorne Base		Kearny Base	
	Material	Labor	Material	Labor	Material	Labor	Material	Labor	Material	Labor
1923	223	208	197	190	186	219	160	163	160	189
1924	213	226	189	208	180	240	158	180	158	209
1925	194	231	183	214	175	246	154	183	154	213
1926	194*	243*	180	224	172	258	150	198	150	230
1940 (Est.)	135	175	...	...	120	186	...	...	112	166

(*)9 Mos.—12 Mos. Hawthorne Material 179, Labor 213.
" " Kearny " 195, " 244.

Western Electric Company, Inc., General Statistical Department.
Date Issued: April 5, 1927.
ARH:ACF.

[fol 4069]

Basis for Estimates of Deflation Indices for Plant Accounts

1914=100

Hawthorne

Buildings

	Old G. S. D.			New Bldgs. Only			New Permanent, Fixtures Only		
	Material	Labor	Comp.	Material	Labor	Comp.	Material	Labor	Comp.
1926	178	207	189*	157	217	184	159	203	178
Estimated Percentage of Price Decline	−30	−10	...	−25	−10	...	−25	−10	...
Estimate for 1940 without Adjustment for Increased Efficiency	125	186	150	118	195	155	119	183	147
Adjustment for Increased Efficiency of Labor	...	−20	...	...	−20	...	...	−20	...
1940	125	149	135	118	156	135	119	146	131

Kearny
(New York Base)

Buildings

	Old G. S. D.			New Bldgs. Only			New Permanent, Fixtures Only		
	Material	Labor	Comp.	Material	Labor	Comp.	Material	Labor	Comp.
1926	194	243	213*	172	258	210	150	230	184
Estimated Percentage of Price Decline	−30	−10	...	−30	−10	...	−25	−10	...
Estimated for 1940 without Adjustment for Increased Efficiency	135	219	169	120	232	169	112	207	153
Adjustment for Increased Efficiency of Labor	...	−20	...	...	−20	...	...	−20	...
1940	135	175	150	120	186	149	112	166	135

(*) 9 Mos. 1296.

Western Electric Company, Inc., General Statistical Department.
Date Issued: 4/6/27.
ARH:ACF.

[fol. 4070]

Index Numbers of Construction Costs

Year	Tuttle	Engineering News Record	American Appraisal: United States	American Appraisal: Central Western	American Appraisal: N. Y. State and Northern N. J.	Aberthaw	A. T. & T.	General Statistical Department: Hawthorne	General Statistical Department: Kearny	General Statistical Department: United States
					1913 Base					
1913	...	100	100	100	100	...	...	100	100	100
1914	...	89	98	99	98	...	...	85	...	96
1915	...	93	102	104	100	...	...	97	...	98
1916	...	147	120	125	118	...	...	119	...	115
1917	...	181	147	154	146	...	...	144	...	140
1918	...	189	171	175	168	...	...	147	...	155
1919	...	198	210	217	201	...	...	153	...	183
1920	...	251	264	275	260	...	...	214	...	238
1921	...	202	207	216	213	...	...	188	...	179
1922	...	175	188	194	187	...	...	157	...	176
1923	...	214	210	219	216	...	...	186	...	196
1924	...	215	206	217	212	...	...	181	205	196
1925	...	207	200	211(b)	206(b)	...	...	177	196	199
1926	...	208	201(a)	212(b)	207(b)	...	...	180	202	203

1914 Base

1914	100	100	100	100	100	100	100	100	100	100
1915	99	104	104	105	102	....	102	103	....	102
1916	....	165	122	126	120	....	121	126	....	120
1917	....	203	150	156	149	....	149	152	....	146
1918	....	212	174	177	171	....	166	155	....	161
1919	....	222	214	219	205	....	196	162	....	191
1920	228	282	269	278	265	....	251	227	....	248
1921	179	227	211	218	217	179	181	199	....	186
1922	170	197	192	196	191	170	176	166	....	183
1923	202	240	214	221	220	202	195	196	214	204
1924	202	242	210	219	216	198	193	192	217	204
1925	200	233	204	213(b)	210(b)	195	195	187	207	207
1926	205	234	205(a)	214(ab)	211(ab)	197	196	191	214	211

(a) Ten months.
(b) Per cent change from United States Index.

Western Electric Company, Inc., General Statistical Department.
Date Issued 1/19/27.
ARH:DK.

[fol. 4071] Notes on Index Numbers of Construction Costs

January 19, 1927

Tuttle.—On substantially the same basis as the Aberthaw index described below.

Engineering News Record index of construction.—Costs based upon the costs of steel (structural shapes, Pittsburgh base), cement (f. o. b. Chicago, exclusive of bags), lumber (Southern pine, New York base), and the average rates paid common labor in the building industry as obtained from the prevailing rates in 20 representative cities. From 1913 to 1920, inclusive, the rates paid common labor in the steel industry were used. The prices are weighted on the basis of the total production of steel, cement and lumber, and the total supply of common labor as follows: steel, 37.50 per cent; lumber, 17.10 per cent; cement, 7.14 per cent, and labor, 38 per cent.

American Appraisal Company.—Indices shown in the tabulation are based upon typical reinforced concrete factory buildings in leading cities. They are based on costs of excavation, walls, framing, floors, roof, and absolutely essential fixtures, such as stairways, stores, windows, and other items of a like nature. Actual quantities of materials and amounts of labor required were priced in detail on the basis of material costs, actual labor costs and reported labor efficiency prevailing in each city at each of the various dates. Indices for districts and the United States as a whole were equal-weighted averages of the indices for the cities.

Aberthaw Index of Building Costs.—Constructed by comparing actual cost of a reinforced concrete factory building erected by the Aberthaw Construction Company of Boston in 1914 with detailed estimates of what the same building would cost at various later dates, starting with 1/1/20. The major classes of items included: concrete, forms, reinforcements, excavation, sheeting, masonry, steel sash, doors, miscellaneous iron work, engineering plans and liability insurance. Costs as summarized for each class of items included labor, materials, plant, and overhead.

Labor costs were 33 per cent of the total in 1914, but are not segregated in the computations for later years. They

are estimated to form 35-40 per cent of the total in May, 1921.

Costs for labor took into account labor efficiency, which varies widely in an inverse relation to activity in the building trades.

Material prices are those which the company would have paid.

A. T. & T. General Building Costs.—Index intended to show fluctuation of costs for all types of buildnigs. A composite of price trends for labor, weighted 40 per cent, and materials, weighted 60 per cent. Labor component is constructed from the hourly wages of the following trades with relative weights (in hours) as indicated:

Carpenters	50	Plasterers	15
Bricklayers	25	Plumbers	10
Cement Finishers	16	Structural Iron Workers	10
Electricians	10	Building Laborers	200
Painters	10		

[fol. 4072] Up to September, 1920, the labor component is based on New York City alone, but afterwards on 11 cities of the United States.

The materials index is Group 6, Building Materials, of the U. S. Bureau of Labor Statistics, index of wholesale prices, in which the weights are quantities sold in 1919 and therefore cover all types of buildings.

General Statistical Department.—

(a) Index for the United States as a whole is a composite of price trends for labor weighted 40 per cent and materials weighted 60 per cent. Labor component is the index of average union wage rate in the building trades published by the U. S. Bureau of Labor Statistics as of May 15th of each year, modified to show monthly deviations on the basis of average wage rates in the principal cities. The materials component is the building materials index compiled by the U. S. Bureau of Labor Statistics as described above for the A. T. & T. index.

(b) Index for Hawthorne is also a composite of labor, 40 per cent, and materials, 60 per cent, but applies to a typical Hawthorne brick-faced, steel-framed building rather than to buildings in general. The labor component is based on Chicago wage rates, with the following weighting:

Bricklayers	13
Carpenters	11
Electricians	7
Ironworkers	15
Laborers	36
Painters	5
Plasterers	5
Steamfitters	4
Plumbers	4
	100

The materials component is based on prices at Chicago or base points for the following items with the weights indicated:

Iron Pipe	7
Steel	35
Lime	1
Brick	6
Cement	4
Steel Billets	6
Sand	4
Terra Cotta	16
Plumbing	9
Lighting	8
Maple Lumber	4
	100

(c) Index for Kearny is constructed as for Chicago, except that New York wage rates and prices are used instead of Chicago wage rates and prices.

RWB:LK.
1/19/27.

[fol. 4073] Estimated Machinery Indices

On the Assumption of a 15 Per Cent Increase in the Efficiency of Productive Labor Used in the Manufacture of Machinery Made and Purchased

	15% Increase in Efficiency of Productive Labor
1926 Preliminary	208
1927	200
1928	188

	15% Increase in Efficiency of Productive Labor
1929	193
1930	187
1931	181
1932	178
1933	175
1934	172
1935	169
1936	166
1937	163
1938	160
1939	157
1940	154
10-year Moving Averages	
1926–1935	185
1927–1936	181
1928–1937	177
1929–1938	174
1930–1939	171
1931–1940	168

Index of 170 for 1940 as estimated (10/22/26) was based on 185 for Productive Labor (Wt. 5), 174 for Other Labor (Wt. 3), 125 for Materials (Wt. 2).

Above figure was obtained by allowing 15 per cent decrease in productive labor cost, reducing the index from 185 to 157.

Western Electric Company, Inc., General Statistical Department.

Date issued 11/24/26.

ARH:LK.

[fol. 4074] Basis for Estimate of Deflation Indices for Plant Account

1914 = 100

Buildings Hawthorne:	Materials	Labor	Composite
1926	178	207	189
Estimated per cent decline	-30%	-10%	...
Estimate for 1940 without adjustment for increased efficiency	125	186	150(a)
Adjustment for increased efficiency of labor	...	-20%	...
1940	125	149	135(b)

The above estimates are the bases for the series of estimates submitted October 22nd (a) and November 5, 1926 (b). It has been further assumed for the purpose of these estimates that the decline from 1930 to 1940 would be at a uniform annual rate. It is assumed that Kearny conditions will parallel those shown above for Hawthorne, with a gradual reduction of the difference between Hawthorne and Kearny.

Machinery

	Made					Combined 2/3 Made 1/3 Purchased
	Productive Labor (52)	Other Labor (26)	Material (22)	Total Costs	Purchased	
1926	223	210	161	206	212	208
Estimated per cent decline	-17%	-17%	-22% to -20%	...	...	...
1940	185	174	125-130	170	...	170

These estimates are the bases for the series of estimates submitted October 22nd. It has been further assumed for the purpose of these estimates that the decline from 1930 to 1940 would be at a uniform annual rate. As the indices for both "Made" and "Purchased" machinery are now moving somewhat together, and the components of both are essentially the same, it is estimated that the index for machinery purchased (and the combined index) will be the same as for machinery made.

Small Tools

	Productive Labor (70)	Other Labor (20)	Steel Bars (10)	Combined
1926	218	210	173	212
Estimated per cent decline	-15%	-15%	-20%	...
1940	185	179	138	180

The bases for the estimates for small tools submitted October 25th follow machinery estimates quite closely, except that the decline is not so extensive because of the larger proportion of skilled labor included in the case of small tools and the fact that most (90%) of these tools are made within our own shops.

R. W. B.:D. K.
11/15/26.

[fol. 4075] Machinery

	Made	Purchased	Combined
1914	100	100	100
1915	101	111	108
1916	116	121	120
1917	159	136	148
1918	165	153	161
1919	181	164	179
1920	234	214	223
1921	191	216	200
1922	183	206	187
1923	203	196	200
1924	199	187	194
1925	204	200	203
1926*	206	212	208

* Preliminary.

	Estimates
1927	200
1928	190
1929	195
1930	190
1931	185
1932	184
1933	183
1934	182
1935	180
1936	178
1937	176
1938	174
1939	172
1940	170

10-year Moving Averages

1926–35	190
1927–36	187
1928–37	184
1929–38	183
1930–39	180
1931–40	178

ARH:EA.
10/22/26.

[fol. 4076]

Machinery "Made" Index

	Productive Labor (51.5) (1)	Other Labor (26.2) (2)	Material (22.3) (3)	Composite
1914	100	100	100	100
1915	100	101	102	101
1916	110	101	146	116
1917	129	107	290	159
1918	153	125	239	165
1919	188	145	208	181
1920	235	171	306	234
1921	211	169	170	191
1922	195	162	179	183
1923	218	174	203	203
1924	223	186	160	199
1925	223	204	160	204
1926*	223	210	161	206

*Preliminary.

(1) Union Scale of Wages for Machinists in Chicago—Monthly Labor Review—September, 1924, p. 60.
(2) "Other" W. E. labor earnings index.
(3) #2 Foundry Iron—Chicago—"Metal Statistics."

Combination of Machinery "Made" and Purchased

1914=100

	Purchased			Made		
	Gross Additions Purchased A	Index B	Deflated Value A/B	Gross Additions A	Index B	Deflated Value A/B
1914	.....	100	.....	.....	100	.....
1915	.....	111	.....	.....	101	.....
1916	$285,076	121	$233,947	$116,072	116	$100,062
1917	542,823	136	398,767	739,872	159	465,328
1918	324,384	153	212,016	629,933	165	381,778
1919	87,178	164	53,157	579,754	181	320,306
1920	1,102,285	214	515,086	897,283	234	383,454
1921	1,045,784	216	484,159	1,786,958	191	935,580
1922	314,284	206	152,565	1,596,856	183	872,599
1923	1,106,307	196	564,442	1,273,484	203	627,332
1924	1,854,483	187	991,702	3,042,683	199	1,528,986
1925	456,080	200	228,040	920,047	204	451,003
1926*	.....	212	.....	.....	206	.....

	Gross Additions Made & Purchased	Deflated Value	Index
1916	$399,148	$334,009	120
1917	1,282,195	864,095	148
1918	954,317	593,794	161
1919	666,932	373,463	179
1920	1,999,568	898,540	223
1921	2,832,742	1,419,739	200
1922	1,911,140	1,025,164	187
1923	2,379,791	1,191,774	200
1924	4,897,166	2,520,688	194
1925	1,376,127	679,043	203
1926*	.....	.....	208(2-3 made, 1-3 pur.)

* Preliminary.

ARH:EA.
10/25/26.

[fol. 4077] Deflation Indices for Plant Accounts (1914 = 100%) for Years 1927-1931 Inclusive

October 19, 1926.

Mr. T. K. Stevenson:

As per request, herewith our estimates of plant cost indices for the five year period 1927-1931, inclusive. These are estimates for the actual years stated. Within the next day we shall furnish you the ten year moving average estimates for the same period.

	Buildings		Machinery Made and Purchased	Furniture and Fixtures	Small Tools
	Hawthorne	Kearny			
1927	180	205	200	145	205
1928	175	195	190	140	200
1929	175	195	195	145	200
1930	175	190	190	145	200
1931	170	185	185	140	195

HB.

E. E. Lincoln.

1926 Values of Cost Indices for W. E. Plant Investment

October 15, 1926.

Mr. T. K. Stevenson:

Herewith estimates of indices for the year 1926. These figures may be subject to a slight change when complete data for the year are available.

Please note that all indices given you in this connection have been reduced to the 1914 base. Indices on building furnished you last year were on the 1913 base.

E. E. Lincoln.

M. S.
Att.

[fol. 4078] 1926 Values of Cost Indices for W. E. Plant Investment (1914 = 100)

Buildings—Hawthorne	189
Kearny	213
Machinery—Combined Index	208
Small Tools	212
Furniture and Fixtures	149

RWB/MLW.

10/16/26

Deflation Indices for Plant Accounts

October 14, 1926.

Mr. T. K. Stevenson:

As per request, herewith our deflation indices for plant accounts. 1926 figures will be available shortly, if you desire them.

We have constructed a separate index for small tools, which we believe to be a little more accurate for the purpose than our machinery index.

It is our recommendation that no separate index be constructed for permanent fixtures, but that the building construction index be used for this purpose. Both Mr. Spurling and we agree that a permanent fixtures index would probably run a little lower on the average than our building index, but unless you consider the matter very urgent, we would scarcely be justified in going to the expense which would be necessary to develop a separate index for this purpose.

E. E. Lincoln.

M. S.
Att.

[fol. 4079] Deflation Indices for Plant Accounts, 1914 = 100

	Buildings		Machinery		
	Haythorne	Kearny	Purchased	Made	Combined
1914	100	...	100	100	100
1915	103	...	111	101	108
1916	126	...	121	116	120
1917	152	...	136	159	148
1918	155	...	153	165	161
1919	162	...	164	181	179
1920	227	...	214	234	223
1921	199	...	216	191	200
1922	166	...	206	183	187
1923	196	...	196	203	200
1924	192	217	187	199	194
1925	187	207	200	204	203

	Furniture & Fixtures	Small Tools
1914	100	100
1915	100	101
1916	104	118

	Furniture & Fixtures	Small Tools
1917	114	139
1918	127	150
1919	146	173
1920	168	212
1921	152	186
1922	148	174
1923	149	205
1924	147	209
1925	147	212

Western Electric Company, Inc., General Statistical Department.

Date Issued—10/14/26.

ARH:MS.

(Here follow side folios 4080 and 4081).

Photo ~ Ex D-30

DEFENDANT'S EXHIBIT D-30

NET INCREASE IN PLANT DURING 15 YEAR PERIOD 1916 TO 1930 INCLUSIVE
(Dollars in Thousands)

	1915	1916		1917		1918		1919		1920		1921		1922	
	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31
Land	$1,217	$ (1)	$1,216	$ 3	$1,219	$ 1	$1,220	$ 230	$1,450	$ (7)	$1,443	$ 8	$ 1,451	$ 10	$ 1,461
Buildings	6,632	255	6,887	743	7,630	293	7,923	601	8,524	1,892	10,416	1,267	11,683	517	12,200
Service Equipment	3,442	88	3,530	532	4,062	337	4,399	331	4,730	586	5,316	905	6,221	375	6,597
Machinery	4,259	274	4,533	1,373	5,906	786	6,692	386	7,078	2,091	9,169	2,800	11,969	1,669	13,638
Small Tools	2,288	568	2,856	1,131	3,987	1,023	5,010	883	5,893	1,794	7,687	1,820	9,507	284	9,791
Furniture and Fixtures	1,596	225	1,821	421	2,242	486	2,728	141	2,869	938	3,807	932	4,739	780	5,519
Total	19,434	1,409	20,843	4,203	25,046	2,926	27,972	2,572	30,544	7,294	37,838	7,732	45,570	3,636	49,206

	1923		1924		1925		1926		1927		1928		1929		1930	
Land	$ 660	$2,121	$ 14	$2,135	$ (43)	$2,092	$ 119	$2,211	$ 38	$2,249	$ 127	$2,376	$4,197	$ 6,573	$2,142	$ 8,715
Buildings	1,682	12,882	5,238	19,120	1,003	20,133	1,302	21,425	2,535	23,960	2,575	26,536	8,347	34,883	14,228(B)	49,111
Service Equipment	850	7,447	1,685	9,132	1,618	10,750	788	11,538	1,063	12,601	1,093	13,694	4,953	18,647	(3,383)(B)	15,264
Machinery	2,440	15,078	5,580	21,658	13	21,671	1,671	23,342	4,018	27,360	3,681	31,041	18,184	49,225	12,588	61,813
Small Tools	1,188	10,979	897	11,876	119	11,995	465	12,460	221	12,681	(342)	12,339	1,781	14,120	2,397	16,517
Furniture and Fixtures	1,340	5,859	1,017	7,876	(1,263)	6,613	619	7,232	556	7,888	552	8,440	2,676	11,116	1,282	12,398
Total	8,160	57,356	14,431	71,797	1,447(A)	73,244	4,964	78,208	8,531	86,739	7,687	94,426	40,138	134,564	29,254	163,818

A The net increase for 1925 excluding reduction for plant sold to Bell Telephone Laboratories, Incorporated, Graybar Electric Company, Inc., and American Forest Products Company was:

Land	$ 601
Buildings	2,626
Service Equipment	2,254
Machinery	1,726
Small Tools	189
Furniture and Fixtures	371
Total	7,767

b In 1930, service equipment which is an integral part of buildings was transferred to the buildings account, resulting in a net credit for that year under service equipment.

DEFENDANT'S EXHIBIT D-31

DETAILS OF RESERVE FOR DEPRECIATION OF PLANT DURING 15 YEAR PERIOD 1916 TO 1930 INCLUSIVE
SHOWING GROSS ADDITIONS TO RESERVE AND WRITE-OFFS (W)
(Dollars in Thousands)

	1915		1916					1917					1918				
	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost
Buildings	$3,003	45.3	$ 254	3.7	[illegible]	.3	$3,241	47.1	$ 277	3.6	$ 8	.1	$3,510	46.0	$ 290	3.7	$ 8	.1	$3,795	47.9
Service Equipment	2,108	61.2	187	4.4	46	1.3	2,216	62.8	214	5.3	62	1.8	2,368	58.3	218	5.0	24	.8	2,562	58.2
Machinery	3,080	70.9	368	8.5	218	4.8	3,186	70.3	631	10.7	53	.9	3,764	63.7	659	9.8	94	1.4	4,329	64.7
Small Tools	2,880	99.7	687	23.0	81	2.8	2,886	100.0	1,120	28.1	(11)	(.3)	3,987	100.0	1,137	22.7	114	2.3	5,010	100.0
Furniture & Fixtures	1,880	99.0	377	20.7	136	7.5	1,821	100.0	480	21.4	60	2.7	2,241	100.0	530	19.4	43	1.6	2,728	100.0
Total	11,948	61.7	1,872	8.8	800	3.4	13,350	69.9	2,722(T)	10.9	178	.7	15,870(T)	63.4	2,834	10.1	289	1.0	18,424	65.2

	1919						1920					1921					
Buildings	$ 293	3.4	$ 13	.2	$4,075	47.8	$ 309	3.0	$ 18	.1	$4,369	41.9	$ 388	3.1	$ 18	.1	$4,712	40.8
Service Equipment	210	4.4	(81)	(1.1)	2,823	59.7	263	4.9	28	.5	3,061	57.6	284	4.1	25	.4	3,290	52.9
Machinery	542	7.7	267	3.8	4,604	65.0	648	7.0	152	1.7	5,097	55.6	758	6.3	179	1.5	5,676	47.4
Small Tools	1,130	19.2	847	4.2	5,093	100.0	1,937	25.2	143	1.9	7,687	100.0	1,912	20.1	92	1.0	9,507	100.0
Furniture & Fixtures	299	10.4	188	8.8	2,869	100.0	1,088	27.7	118	3.0	3,807	100.0	1,111	25.4	179	3.8	4,739	100.0
Total	2,474	8.1	494	2.1	20,264	66.6	4,207	11.1	480	1.2	24,021	63.8	4,393	9.6	490	1.1	27,924	61.3

	1922						1923					1924					
Buildings	$ 446	3.7	$ 44	.4	$5,114	41.9	$ 364	2.6	$ 18	.1	$5,460	39.3	$ 482	2.5	$ 55	.3	$5,887	30.6
Service Equipment	318	4.8	31	.5	3,576	54.2	302	4.1	20	.3	3,886	51.8	455	5.0	194	2.1	4,117	45.1
Machinery	890	6.8	135	1.0	6,438	47.2	1,308	8.1	231	1.4	7,510	46.7	2,065	9.5	239	1.1	9,336	43.1
Small Tools	1,029	10.6	745	7.6	9,791	100.0	1,346	12.3	358	3.3	10,779	98.2	1,532	12.9	1,024	8.6	11,287	95.0
Furniture & Fixtures	300	16.8	120	6.8	1,819	100.0	1,407	20.8	127	1.8	6,799	99.1	1,431	18.2	526	6.7	7,704	97.8
Total	3,983	7.8	1,075	2.2	30,451	61.8	4,727	8.2	754	1.3	34,434	60.0	5,965	8.3	2,038	2.8	38,331	53.4

	1925						1926					1927					
Buildings	$ 541	2.7	$1,804	6.8	$5,124	25.8	$ 631	2.9	$ 101	.5	$5,653	26.4	$ 768	3.2	$ 330	1.4	$6,088	25.4
Service Equipment	555	5.2	727	6.8	3,948	36.7	514	4.8	163	1.4	4,297	37.2	576	4.6	106	.8	4,767	37.8
Machinery	1,880	8.7	1,055	4.9	10,161	46.9	1,734	7.4	919	3.9	10,976	47.0	1,891	6.9	817	1.9	12,360	45.1
Small Tools	1,638	13.7	1,248	10.4	11,677	97.3	1,298	10.4	924	7.4	12,051	96.7	1,438	11.3	1,389	10.7	12,127	95.6
Furniture & Fixtures	838	18.7	2,009	30.4	6,838	28.8	923	12.8	346	4.8	7,110	98.3	978	12.4	334	4.2	7,754	98.3
Total	5,452	7.4	6,843(3)	8.7	37,440	51.1	6,100	8.8	2,483	3.1	40,067	61.3	6,446	8.8	2,996	3.1	43,086	47.7

	1928						1929					1930					
Buildings	$ 848	3.2	$ 304	1.1	$6,632	25.0	$ 909	2.6	$ 847	.7	$7,294	20.9	$1,487	3.0	$(2,109)(U)	(4.3)	$10,890	22.2
Service Equipment	609	4.4	384	2.4	5,082	36.9	669	3.6	406	2.2	5,315	28.5	640	4.2	2,386(U)	15.6	3,569	23.4
Machinery	4,748	18.5	969	3.1	16,126	62.0	3,439	7.0	972	2.0	18,593	37.8	5,388	8.7	784	1.3	23,197	37.8
Small Tools	2,018	16.4	1,806	14.6	12,389	100.0	4,341	31.0	2,600	18.4	14,120	100.0	3,713	22.8	1,316	8.0	16,817	100.0
Furniture & Fixtures	1,389	16.8	708	8.8	8,230	100.0	3,396	30.8	780	6.8	11,116	100.0	1,908	18.4	686	8.0	12,398	100.0
Total	9,609	10.8	4,105	4.8	48,849	51.8	12,754	9.8	4,848	3.7	56,438	41.9	13,136	8.0	3,003	1.8	66,871	40.6

Above figures for the years 1924 to 1930 inclusive, exclude extraordinary reserve against plant built up as follows:

	1924	1925	1926	1927	Total
Buildings	$1,073	$ 646	$1,058	$ 716	$3,493
Service Equipment	280	310	519	235	1,344
Machinery	847	1,212	528	858	3,429
Total	2,160	2,168	2,103	1,809	8,266

3 The write-off for 1925 excluding reserve for depreciation of plant sold to Bell Telephone Laboratories, Incorporated, Graybar Electric Company, Inc., and American Forest Products Company was:

	Amount	Per Cent
Buildings	$ 163	.8
Service Equipment	175	1.6
Machinery	334	1.5
Small Tools	1,179	9.8
Furniture and Fixtures	383	5.8
	2,234	3.1

U In 1930, service equipment which is an integral part of buildings was transferred to the building account, resulting in an increase in the reserve applicable to buildings with a corresponding decrease in service equipment reserve.

T Does not include reserve of $415,000 for excess war cost which was cancelled in following year.

W Write-offs represent retirements.

EXHIBIT D-32

Statement of Hawthorne and Kearny Plant

Raised to 1927 Index

	a	b	c	d	e	f	g	h	i	
	Hawthorne									
		Buildings			Permanent Fixtures			Machinery		
	Face Value of Additions	Cost Index	1927 Level (175)	Face Value of Additions	Cost Index	1927 Level (170)	Face Value of Additions	Cost Index	1927 Level (200)	
Prior to 1914	$4,389	100	$7,681	$2,310	100	$3,927	$1,308	100	$2,616	1
1914	77	100	135	100	100	170	184	100	368	2
1915	50	111	79	75	101	126	158	108	293	3
1916	239	144	290	73	115	108	241	120	402	4
1917	744	153	851	528	140	641	642	148	868	5
1918	527	166	856	350	153	389	736	161	914	6
1919	533	161	579	261	158	281	231	179	258	7
1920	1,746	207	1,476	510	177	490	1,813	223	1,626	8
1921	1,270	177	1,256	916	167	932	2,750	200	2,750	9
1922	527	156	591	362	146	422	1,887	187	2,018	10
1923	1,012	181	987	659	164	683	1,480	200	1,480	11
1924	442	188	411	724	169	728	3,249	194	3,349	12
1925	202	189	187	204	175	198	1,317	203	1,298	13
1926	126	184	120	79	178	75	1,493	208	1,436	14
	11,893	...	15,199	7,151	...	9,170	17,489	...	19,676	15
Increase	...	...	3,306	...	...	2,019	...	...	2,187	16
	Kearny									
1923	...	...	(200)	...	...	(175)	...	...	(200)	...
1924	470	194	485	119	168	124	757	200	757	17
1925	4,135	206	4,015	1,002	178	985	1,690	194	1,742	18
1926	3,061	204	3,001	2,108	179	2,061	907	203	894	19
	1,463	210	1,393	815	184	775	833	208	801	20
	9,129		8,894	4,044		3,945	4,187		4,194	21
Increase	...	...	235*	...	...	99*	...	...	7	22
Net Change	...	...	3,071	...	...	1,920	...	...	2,194	23

*=Decrease.

July 1, 1927.

D-32 (2)

Study of Plant Valuations

(Expressed in Thousands of Dollars)

	a	b	c	d	e	f	g	h	
	Total	Grounds	Buildings	Permanent Fixtures	Machinery	Small Tool	Patterns	Furniture and Fixtures	
Total Face Value, Dec. 31, 1926	$78,208	$2,211	$21,425	$11,538	$23,342	$12,017	$444	$7,231	1
(Estimated) Dec. 31, 1927	90,918	2,211	25,684	12,701	28,416	13,160	547	8,199	2
Average	84,563	2,211	23,554	12,199	25,879	12,589	496	7,715	3
Adjustments:									
To cover appreciation in Value of Grounds to Appraised Value	1,201	1,201							4
Interest on Investment during construction (1 yr. at 6%)	2,140		1,413	727					5
Excessive Costs written off Face Value at Kearny	372		251	121					6
Deduct Norfolk Grounds*	205*	205*							7
To Raise Plant to Replacement Cost	7,185		3,071	1,920	2,194				8
Average Revised Value	95,250	3,207	28,289	14,487	28,073	12,589	496	7,715	9
Observed Depreciation:									
Rates			5%	5%	10%	33 1-3%	33 1-3%	10%	10
Amount	10,098		1,414	744	2,807	4,195	165	772	11
Average Revised Fair Value	85,158	3,207	26,875	14,143	25,266	8,393	331	6,493	12
Adjustment for Difference Between Average Based on Investment:									
a. At Beginning and End of Year—Above	$84,563								
b. On Monthly Balances	83,444								
	1,119								
Revised Average Investment	84,039								

*=Decrease.

July 1, 1927.

[fol. 4084] DEF'T'S EX. D-33, ID.

Explanation of Reserve Carried on the Western Electric Company Books as of December 31, 1926, Against Investment in the Stock of the Graybar Electric Company, Inc.

1. The permanent investment of the Western Electric Company as of 12|31|25 in the Supply Department was	$7,500,000
When this Department was sold to the Graybar Electric Company, a value was placed on the business as represented by the capital stock of	15,000,000
and an asset set up representing good will amounting to	7,500,000
This revaluation of the assets sold to the Graybar Electric Company was not, however, taken in the profits of the Western Electric Company, but was set up as a reserve against the capital stock of the Graybar Electric Company held by the Western Electric Company in the amount of this good will	7,500,000
2. Before selling certain assets of the Supply Department to the Graybar Electric Company, the following revaluations were made, the result of which revaluations was not taken in the profits of the Western Electric Company, but set up as a reserve against the Western Electric Company holdings in the capital stock of the Graybar Electric Company.	
(a) Plant	414,000
The Supply Department carried as of 12|31|25 plant on their books at	$897,000
with a depreciation reserve of	857,000
or a net value of	$40,000
Before selling this plant to the Graybar Electric Company it was revalued through the depreciation reserve and appeared on the books of the Graybar Electric Company as of 1|1|26, as follows:	
Cost	897,000
Depreciation reserve	443,000
Net value	454,000
The book profit resulting from this revaluation was set up as a reserve against the Graybar stock held by the Western Electric Company.	
(b) Investments	119,000
At 12|31|25 there was on the books of the Supply Department a reserve of 100% against receivables from the Habirshaw Cable and Wire Corporation. At date of sale these receivables were valued at $119,000.	

[fol. 4085]

(c) Merchandise inventories	$267,000
The merchandise inventory as shown by the books of the Supply Department as of 12|31|25 included merchandise which had been purchased from the Western Electric Company, which was valued at the Supply Department's cost; that is, Western Electric Company's selling prices. The gross profit to the Western Electric Company on the sale of such merchandise remaining on the Supply Department's inventories was considered as a reserve against the Western Electric Company's holdings in the Graybar Electric Company after the sale.	
Total reserve against stock of the Graybar Electric Company	$8,300,000

[fol. 4086]

EXHIBIT D-34

Statement of Assets and Liabilities of the Graybar Electric Company, Inc.

(Dollars in Thousands)

	After Close of Business 12/31/25 (1/1/26)	At 12/31/26	At 12/31/27	At 12/31/28	
Assets:					
Plant	$897	$1,167	$1,306	$1,344	1
Investments	241	655	644	667	2
Merchandise, Material and Supplies	4,490	4,423	3,917	4,482	3
Receivables	8,669	8,331	6,903	8,490	4
Cash	1,441	1,507	1,983	1,920	5
Good Will	7,500	7,500	7,500	3,000	6
Total Assets	23,238	23,583	22,253	19,903	7
Liabilities:					
Capital Stock	15,000(R)	15,000(R)	15,000(R)	9,000(S)	8
Surplus	0	1,283	1,223	3,729	9
Current Liabilities:					
Bills Payable, Pension Fund Trustee	0	0	174	451	10
Other Payables	6,035	4,488	4,663	6,123	11
Trade Acceptances and Bills Receivable Discounted	596	533	.....	.....	12
Taxes and Accruals not Due	1,164	1,471	.....	.....	13
Total Current Liabilities (10 to 13)	7,795	6,192	4,837	6,574	14
Reserve for Employees' Benefit Fund and Self-Insured Risks	0	134	135	4	15
Reserve for Depreciation on Plant and Equipment	443	974	1,058	596	16
Total Liabilities	23,238	23,583	22,253	19,903	17

(R) Capital—150,000 shares at $100.00 par value.

(S) Capital—Common Stock (30,000 shares at $100.00 par value) $3,000,000
Preferred Stock (60,000 shares at " " ") 6,000,000

Total $9,000,000

NOTE.—This Company was sold December 31, 1928, to the Graybar Management Corporation for $9,000,000. Graybar Management Corporation stockholders of common stock must be employes of Graybar Electric Company, Inc.

[fol. 4087]

DEF'T'S EX. D-35

Book Value and Depreciation Reserve on Plant on the Books of the Engineering Department of the Western Electric Company as of 12/31/24 Compared with the Book Value and Depreciation Reserve as Shown by the Books of the Bell Telephone Laboratories as of 1/1/25

	On the Books of the W. E. Co. 12/31/24	On the Books of the B. T.-L. 1/1/25	Difference
Book Value:			
Permanent Plant	$2,629,170	$2,650,000	$20,830+
Machinery	1,510,857	1,510,857	0
Small Tools	68,178	68,178	0
Furniture & Fixtures	812,934	812,934	0
Plant in Process	209,906	209,906	0
Total	$5,231,045	$5,251,875	$20,830+
Depreciation Reserve:			
Permanent Plant	1,627,616	0	$1,627,616−
Machinery	679,885	679,885	0−
Small Tools	68,178	51,134	17,044−
Furniture & Fixtures	812,934	365,820	447,114
Plant in Process	0	0	0
Total	$3,188,613	$1,096839	$2,091,774−
Net Value:			
Permanent Plant	$1,001,554	$2,650,000	$1,648,446+
Machinery	830,972	830,972	0
Small Tools	0	17,044	17,044+
Furniture & Fixtures	0	447,114	447,114+
Plant in Process	209,906	209,906	0
Total	$2,042,452	$4,155,036	$2,112,604+

10/27/31.

NOTE.—Above is complete copy of statement (carbon copy) received from Mr. Meeson for examination in reply to Mr. Wray's letter of Dec. 18, 1931, to Mr. Gregory.

EEH B. 1-14-32.

[fol. 4088] DEF'T'S EX. D-36, ID.

Explanation of Reserve on the Books of the Western Electric Company as of December 31, 1926, Against Demand Notes of the Bell Telephone Laboratories, Inc.

On December 31, 1924, plant on the books of the Engineering Department of the Western Electric Company was sold to the Bell Telephone Laboratories, Inc., for ..... $4,155,036 arrived at as follows:

Permanent plant on the basis of an appraisal of this property as a going business by Horace S. Ely and Company	$2,650,000	
Machinery at Western Electric Company's depreciated book cost	830,972	
Small tools at 25% of the book cost to the Western Electric Company	17,044	
Furniture and fixtures at 55% of the book cost to the Western Electric Company	447,114	
Plant in process at book cost to the Western Electric Company	209,906	
Total		4,155,036
Depreciated book cost as shown by the books of the Western Electric Company at 12/31/24 was		2,042,432
Book profit on the sale of plant to the Bell Telephone Laboratories, Inc.		2,112,604

Since the capital stock of the Bell Telephone Laboratories, Inc., amounting to $100,000 was purchased 50% by the Western Electric Company and 50% by the A. T. & T. Co., the above book profit was credited as follows on the books of the Western Electric Company:

50% to the reserve against the notes of the Bell Telephone Laboratories, Inc.	1,056,302
50% to the reserve for contingencies	1,056,302
Total	$2,112,604

In 1927 both of these reserves were transferred to surplus.

[fol. 4089] EXHIBIT D-38

Classification of Customers

Classes A and B—Companies under Supply Contract.
- A—Associated Bell Companies.
- B—Non-Associated Contract Companies.

Class C—Non-Associated Non-Contract Telephone Companies.
- C-1—Connecting.
- C-2—Independent Non-Competing.
- C-3—Independent Competing.

Class D—Other Domestic Customers.
D-4—Central Stations and Electric Railways.
D-5—Industrial Plants and Other Large Users.
D-6—Electrical Contractors and Dealers.
D-61—Other Dealers.
D-7—Steam Carriers.
D-8—Miscellaneous.
D-9—Government (Except Government Department New York).
Class E—Export. (Sales to International Western Electric Company, Incorporated, Delaware).
Class G—Government Sales. (Orders taken through Government Department, at New York).

ERPI.

[fol. 4090] EXHIBIT D-39

Conditions Under Which We Extend the Benefits of the Standard Supply Contract to Bell Connecting Companies

The conditions under which we extend the benefits of the Standard Supply Contract to Bell Connecting Companies are as follows:

1. The Licensee Telephone Company to which the Telephone Company desiring such benefits is a subsidiary or a sub-licensee, should request the Western Electric Company, in writing, to extend such benefits. The form of letter required together with the form of our acceptance is attached.

2. The Telephone Company for which such benefits are requested should be owned or controlled by the Licensee Company.

3. The Telephone Company for which such benefits are requested should have a sub-license agreement with the Licensee Company or the volume of purchases should be sufficiently large to justify the Western Electric Company handling the business on the low basis of prices enjoyed by the Licensee Companies, taking into consideration the fact that the account carries no credit risk.

4. The Licensee Company must guarantee payment of the account of the subsidiary or sub-licensee company.

It is the general intent of the Contract with the Licensee Companies that their purchases under it should be for their own use, and the same condition applies to subsidiary or sub-licensee Telephone Companies.

* Present Class B companies include two companies not owned or controlled by licensee companies, but which have license agreements with licensee companies.

[fol. 4091] DEF'T'S EX. D-41, Id.

Schedule B

Analysis of Sales to Bell Customers, 1916 to 1930

(Dollars expressed in thousands)

	a Total Sales to Bell Customers (Schedule A)	b Sales to Associated Companies	c Sales to Western Union Telegraph Company	d Sales to Non-Associated Companies (B Cas)	e Sales to Employees
1916	$73,915	$66,074	$6,875	$966	(Sales
1917	104,682	94,174	9,337	1,171	to
1918	79,217	67,860	10,514	843	Emp.
1919	80,361	69,982	8,837	1,542	Inc. in
1920	130,712	113,517	14,076	3,119	Sales
1921	142,885	135,560	4,533	2,792	to
1922	159,957	158,614	.....	1,343	Non-
1923	188,159	185,969	.....	2,190	Assoc.
1924	233,300	229,352	.....	3,948	Comp.
1925	226,700	221,534	.....	5,166	Col.
1926	247,203	240,732	.....	6,471	d.
1927	241,062	237,253	.....	3,303	$506
1928	267,808	264,586	.....	3,000	222
1929	372,384	366,902	.....	5,339	143
1930	338,830	334,999	.....	3,831	Inc. in Non-Bell)
Total	$2,887,175	$2,787,108	$54,172	$45,024	$871

[fol. 4092]

EXHIBIT D-42

Schedule C

Analysis of Sales to Non-Bell Customers, 1916 to 1930

(Dollars Expressed in Thousands)

	a Total Sales to Non-Bell Customers (Schedule A)	b Domestic Customers (of Supply Dept.)	c Export and Foreign	d U.S. Government	e Distributors Graybar Elec. Co.	f Distributors Int. Standard Elec. Co.	g Distributors Northern Elec. Co.	h Elec. Research Products	i Other Customers (V)
1916	$33,072	$26,293	$6,779	$.....	xx	.....	.....	xx	xx
1917	45,658	33,676	7,879	4,103	xx	.....	.....	xx	xx
1918	66,009	39,619	4,565	21,825	xx	.....	.....	xx	xx
1919	55,361	43,941	5,430	5,990	xx			xx	xx
1920	75,400	69,385	5,185	830	xx			xx	xx
1921	46,880	40,178	6,702	.....	xx			xx	xx
1922	50,984	48,997	1,987	.....	xx			xx	xx
1923	67,018	63,523	3,495	.....	xx	(Included in Export and		xx	xx
1924	64,981	60,708	4,273	.....	xx	Foreign Customers		xx	xx
1925	71,029	67,585	3,444	.....	xx	Col. c.)		xx	xx
1926	15,902	.....	.....	.....	$9,908	$2,48	$1,084	.....	$2,462
1927	12,662	xx	.....	.....	6,817	1,953	1,373	$2,519	xx
1928	20,123	xx	.....	.....	7,186	1,780	1,846	9,311	xx
1929	38,566	xx	.....	.....	8,167	1,833	3,458	25,108	xx
1930	22,648	xx	.....	.....	7,054	1,272	2,986	10,518	818
Total	$686,293	$493,905	$40,739	$32,748	$39,132	$9,286	$10,747	$47,456	$3,280

(V) 1926 "Other Customers" includes Western Union Telegraph Company, Vitaphone Co., Victor Talking Machine Co., Inc., Columbia Phonograph Co., Inc., U. S. Government. 1930 "Other Customers" includes Aviation Companies and Employees.

[fol. 4093] EXHIBIT D-46

Basis of Valuation of Inventory

1. Primary Valuation:

a. Raw Materials. Figured costs.

b. Manufactured and semi-manufactured merchandise. Figured costs.

c. Not W. E. manufactures per W. E. specifications and other not W. E. manufactures. Actual cost.

Figured costs represent standard costs.

2. Reductions to arrive at net inventory valuation.

a. Raw Materials. Figured costs are reduced to actual cost or market value whichever is lower.

b. Manufactured and Semi-manufactured merchandise. Figured costs are reduced to average actual costs if lower.

Deductions are made from the primary valuation of manufactured and semi-manufactured merchandise in arriving at net inventory valuation as follows:

Manufacturing development.
Vacation and enforced absences.
Disability benefits and accrued service pensions.
Overtime and minimum earnings allowance.
Cost and rearrangement of general moves.
Preliminary packing.
Errors in figuring and stock losses.

c. The valuation of raw materials and manufactured and semi-manufactured merchandise, except work in process is reduced as follows:

In poor physical condition. Items are individually reduced to scrap or salvage value or by the cost of repairing or converting.

In good physical condition. Items are reduced by the application of percentages to provide for losses which, based on experience, may be incurred on items before they are used or disposed of. The percentage to be applied in each case is governed by the number of months stock on hand over normal.

[fol. 4094] DEF'T'S EX. D-47

Statement Showing the Method of Arriving at Merchandise Inventories as Shown on the Stockholders' Reports as of December 31, 1915, and December 31, 1930

(Dollars in thousands)

	December 31, 1915	December 31, 1930
Inventory Valuation at Fixed Cost	(a) $20,031	$114,862
Adjustments to arrive at Net Inventory Valuation:		
1. Adjusting Raw Material Inventories and Raw Material Content in Process and Completed Inventories:		
(a) To cost	519	(4,551)
(b) To Market Value if lower than Cost	0	(1,720)
2. Reduction to Fair Market Value (except Special Stocks and Returned Material)	(2,310)	(5,088)
3. Reduction to Fair Market Value on Returned Material and Special Stocks (charged to Deferred Receivables)	(1,063)	(10,651)
4. Excluding [illegible] Labor Increment Lo[illegible]	(b)	(1,198)
5. Excluding [illegible] and Minimum Ea[illegible]nces	(b)	(586)
6. Excluding [illegible]ng Development, [illegible] and Enforced Absence [illegible]isability Benefits and Accrued Service Pensions	(b)	(3,361)
7. Excluding Cost of Rearrangement and General Moves	(b)	(435)
8. Excluding Preliminary Packing, Reel and Spool Expense	0	(351)
9. Excluding Errors in Figuring and Stock Losses	(b)	(293)

	December 31, 1915	December 31, 1930
10. Adding Engineering Development Expense	203	(c)
Total Adjustments to arrive at Net Inventory Revaluation	(2,651)	(28,184)
Net Inventory Valuation	17,380	86,678

a. Figured costs represents for manufactured products, standard costs and for purchased supplies, invoiced costs.

b. In 1915, these items were either not incurred, or, if incurred, were not included in figured costs.

c. The practice of adding engineering development to inventories has been discontinued.

[fol. 4095] EXHIBIT D-48

Sales of Apparatus and Equipment Designed Entirely or in Part by Western Electric Company, Incorporated, but Manufactured by Others.

Included in Sales of Manufactures to Bell Companies on Exhibit #31004

1921 to 1930, Inclusive (A)

1921	$3,256,000
1922	2,903,000
1923	3,049,000
1924	13,339,000
1925	12,851,000
1926	14,138,000
1927	11,966,000
1928	10,224,000
1929	13,460,000
1930	17,066,000
Total	$102,252,000

A. Information prior to 1921 not available.

[fol. 4096] DEF'T'S EX. D-49, ID.

11/24/31.

Graybar Electric Co. Sales and Estimated Net Profits on Western Electric Manufactures, 1926-1928

(Dollars in Thousands)

	1926	1927	1928
Sales	$12,172	$9,020	$9,789
Gross Profits	2,748	2,345	2,428
Expenses	1,544	1,352	1,331
Net Profits	1,204	993	1,097
% Net Profits of Sales	9.9%	11.0%	11.2%

[fol. 4097] EXHIBIT D-50

Graybar Electric Company, Inc.

Earnings for the Years 1926, 1927 and 1928

(Dollars in Thousands)

	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928
Sales	$76,588	68,712	72,702
Gross profits	$11,797	10,898	11,515
Other income	123	131	152
Total	$11,920	11,029	11,667
General expense	$2,943	2,133	1,730
Distributing expense	7,177	6,844	7,067
Federal taxes	319	288	318
Reserve for employees' pensions	133	.....	.....
Total Expenses	$10,572	9,265	9,115

	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928
Net profits available for interest and dividends	$1,348	1,764	2,552
Interest deductions	65	24	41
Net profits available for dividends	$1,283	1,740	2,511
Dividends paid		1.800	2.010
Undivided profits	$1,283	(60)	150

Change in Surplus Account

Balance in surplus 1/1/26	$0
Undivided profits 1926	1,283
Balance 12/31/26	$1,283
Undivided profits 1927	(60)
Balance in surplus 12/31/27	$1,223
Undivided profits 1928	501
Reduction in capital stock (increase in surplus)	6,000
Goodwill retired	(4,500)
Revaluation of plant	505
Balance in surplus 12/31/28	$3,729

[fol. 4098]

EXHIBIT D-51

Graybar Electric Company, Inc.

Statement of Assets and Liabilities, 1926-1928

(Dollars in Thousands)

	After close of business Dec. 31, 1925 (1/1/26)	At Dec. 31, 1926	At Dec. 31, 1927	At Dec. 31, 1928
Assets:				
Plant	$897	1,167	1,306	1,344
Investments	241	655	644	667
Merchandise material and supplies	4,490	4,423	3,917	4,482
Receivables	8,669	8,331	6,903	8,490
Cash	1,441	1,507	1,983	1,920
Goodwill	7,500	7,500	7,500	3,000
Total Assets	$23,238	23,583	22,253	19,903

	After close of business Dec. 31, 1925 (1/1/26)	At Dec. 31, 1926	At Dec. 31, 1927	At Dec. 31, 1928
Liabilities:				
Capital stock	$15,000(R)	15,000(R)	15,000(R)	9,000(S)
Surplus	.....	1,283	1,223	3,729
Current liabilities:				
Bills payable, Pension Fund Trustee	.....	.....	174	451
Other payables	6,035	4,488	4,663	6,123
Trade acceptances and bills receivable discounted	596	1,533	.....	.....
Taxes and accruals not due	1,164	1,171	.....	.....
Total Current Liabilities	$7,795	6,192	4,837	6,574
Reserve for Employees' Benefit Fund and Self-Insured Risks	.....	134	135	4
Reserve for depreciation on plant and equipment	443	974	1,058	596
Total Liabilities	$23,238	23,583	22,253	19,903

(R) Capital: 150,000 shares at $100.00 par value.

(S) Capital:

Common stock (30,000 shares at $100.00 par value)	$3,000,000
Preferred stock (60,000 shares at $100.00 par value)	6,000,000
Total	$9,000,000

NOTE.—This Company was sold December 31, 1928, to the Graybar Management Corporation for $9,000,000. Graybar Management Corporation stockholders of common stock must be employees of Graybar Electric Company, Inc.

[fol. 4099]

EXHIBIT D-52

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, *Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year
1918					
1919					
1920					
1921					
1922	$2,000,000.00 (a)	4½%	Oct. 13, 1922	Sept. 25, 1923	$1,621,917.81
	2,000,000.00 (a)	4½%	Oct. 13, 1922	Sept. 29, 1923	
	1,000,000.00 (a)	4½%	Oct. 13, 1922	Oct. 13, 1923	
	5,000,000.00 (a)	4½%	Nov. 22, 1922	Oct. 13, 1923	
	2,000,000.00 (a)	4½%	Dec. 30, 1922	Oct. 13, 1923	
Total	12,000,000.00				1,621,917.81
1923	1,000,000.00 (b)	4¾%	Mar. 16, 1923	Oct. 20, 1923	17,305,555.56
	2,000,000.00 (b)	4¾%	Mar. 20, 1923	Oct. 20, 1923	
	2,000,000.00 (b)	4¾%	Mar. 26, 1923	Oct. 20, 1923	
	3,000,000.00	5 %	Apr. 20, 1923	Oct. 30, 1923	
	1,000,000.00	5 %	Apr. 26, 1923	Oct. 30, 1923	
	1,000,000.00	5 %	Apr. 26, 1923	Apr. 11, 1924	
	2,000,000.00	5 %	May 21, 1923	Apr. 11, 1924	
	2,000,000.00	5 %	Aug. 9, 1923	Apr. 11, 1924	
	1,000,000.00	5 %	Aug. 15, 1923	Apr. 11, 1924	
Total	15,000,000.00				17,305,555.56

Average principal on loans made prior to January 1, 1923, is included in this statement.

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, *Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year	
1924	3,000,000.00	4⅞%	Feb. 15, 1924	Apr. 11, 1924	6,011,111.11	
	6,000,000.00	4⅞%	Feb. 13, 1924	Apr. 11, 1924	.....	
	3,000,000.00	4⅞%	Feb. 20, 1924	Apr. 11, 1924	.....	
	2,000,000.00	5 %	Mar. 11, 1924	Apr. 11, 1924	.....	
	5,000,000.00	6 %	Apr. 21, 1924	Apr. 30, 1924	.....	
	1,000,000.00	6 %	Apr. 25, 1924	Apr. 30, 1924	.....	
	500,000.00	6 %	May 15, 1924	May 31, 1924	.....	
	5,000,000.00	6 %	May 20, 1924	May 31, 1924	.....	Temporary investments at current banking rates.
	2,000,000.00(c)	4 %	June 26, 1924	Nov. 21, 1924	.....	
	2,000,000.00	3½%	Aug. 21, 1924	Aug. 30, 1924	.....	
	1,000,000.00	3½%	Aug. 20, 1924	Aug. 30, 1924	.....	
	2,000,000.00	3½%	Aug. 25, 1924	Aug. 30, 1924	.....	
	2,000,000.00	3½%	Aug. 29, 1924	Aug. 30, 1924	.....	
	2,000,000.00	3½%	July 11, 1924	Nov. 21, 1924	.....	
	2,000,000.00	3½%	Sept. 12, 1924	Nov. 21, 1924	.....	
Total	38,500,000.00				6,011,111.11	
1925	15,000,000.00	3½%	Sept. 15, 1925	Sept. 30, 1925	625,000.00	
1926	.....	.....	.....	.....	.....	
1927	620,656.78 (d)	3.85%	Dec. 31, 1927	Jan. 31, 1928	.....	Government obligations purchased Dec. 31, 1927, from Western Electric with resale agreement. Reflected in average for 1928.
	217,116.38	3.95%	Dec. 31, 1927	Jan. 31, 1928	.....	
	689,520.00	4.00%	Dec. 31, 1927	Jan. 31, 1928	.....	
Total	1,527,293.16				.....	

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year	
[fol. 4100]						
1928	1,013,324.29	3.80%	Apr. 6, 1928	May 11, 1928	801,906.87	
	353,713.48	3.95%	Apr. 2, 1928	Apr. 30, 1928		
	682,768.18	4.00%	Apr. 2, 1928	Apr. 30, 1928		Government obligations purchased from Western Electric Company with resale agreement. Average reflects those bought from Western Electric Co. in 1927.
	152,587.50	4.76%	Nov. 19, 1928	Dec. 31, 1928		
	1,010,743.06	4.80%	Nov. 2, 1928	Dec. 31, 1928		
	406,162.50	4.80%	Nov. 19, 1928	Dec. 31, 1928		
	506,722.22	4.83%	Nov. 2, 1928	Dec. 31, 1928		
	1,015,111.11	4.83%	Nov. 17, 1928	Dec. 31, 1928		
	456,900.00	4.83%	Nov. 19, 1928	Dec. 31, 1928		
	3,500,000.00	5⅜%	Dec. 6, 1928	Dec. 31, 1928	243,055.56	Temporary investments at current banking rates.
Total	9,098,032.34				1,044,962.43	
1929	66,000,000.00	5.88%	Various dates	During 1929 & 1930	22,388,860.50	Allotment.
	2,030,997.99	4¼%	Dec. 20, 1929	Jan. 14, 1930	62,058.35	Government obligations purchased from Western Electric Co. with resale agreement.
Total	68,030,997.99				22,450,918.85	
1930	34,000,000.00 (d)	5.88%	Various dates	During 1930	21,117,344.45	Allotment.
	30,000,000.00	4¼%	Sept. 30, 1930			Loaned in connection with purchase of Teletype Corporation.
Total	64,000,000.00				21,117,344.45	

(a) Rate changed to 4¾% effective April 2, 1923, and changed to 5% effective May 1, 1923.
(b) Rate changed to 5% effective July 15, 1923.
(c) Rate reduced to 3½% on July 26, 1924, and to 3% on October 1, 1924.
(d) Excludes government obligations purchased outright (no resale agreement):

1927	$6,094,123.38
1930	1,043,042.45

[fol. 4101] DEF'T'S EX. D-53, ID.

Teletype Corporation

Balance Sheet at September 30, 1930

Assets

Plant	$3,296,000
Investments in associated companies	188,000
Merchandise	1,703,000
Patents	416,000
Notes receivable	1,500,000
Accounts receivable	433,000
Marketable securities	797,000
Cash	758,000
	$9,091,000

Liabilities

Capital:	
Preferred stock	$1,398,000
Common stock	1,500,000
Mortgages on property	79,000
Other current liabilities	604,000
Reserve for depreciation of plant	555,000
Reserve for depreciation of patents	198,000
Undivided profits	1,318,000
Surplus	3,439,000
	$9,091,000

[fol. 4102] DEF'T'S EX. D-54, ID.

1. The purchase of the Teletype Corporation was effective October 1, 1930 and negotiations for that purchase had been carried on for some three months prior. Western Electric Company determined the price it was willing to pay on the basis of the following facts and estimates:

a. The sales of the Teletype corporation for 1929 were $11,136,000 and were estimated at $10,800,000 for 1930.

b. The purchases of the Bell System increased from $459,000 in 1926, $1,236,000 in 1927, to $3,900,000 in 1929. In March, 1930, it was estimated that the volume of such

purchases would be $4,000,000 in 1931, $5,100,000 in 1932, $6,100,000 in 1933 and $7,700,000 in 1934.

c. The total sales of the Teletype Corporation were: 1926, $2,400,000; 1927, $3,200,000; 1928, $5,046,000; 1929, $11,136,000.

d. The earnings of the Teletype Corporation for 1929 were $3,827,000 and were estimated at that time at $3,900,000 for 1930.

e. The purchase was made with the expectation that the Western Electric Company would be able to earn a satisfactory return on the purchase price. The earnings of the Teletype Corporation for the years 1929 and 1930 indicated a return of between 12% and 13%.

2. The Teletype Plant occupies six and one-half acres of land on Wrightwood Avenue, Chicago. It consists of thirteen buildings comprising 280,000 square feet of floor space.

[fol. 4103] EXHIBIT D-55

Teletype Corporation

Condensed Summary of Results for the Year 1931 Compared with 1930

(Dollars in Thousands)

	a	b	c	d	
Assets and Liabilities:	Dec. 31; 1931	Dec. 31, 1930	Inc. of Dec. 31, 1931, Over Dec. 31, 1930	% Inc.	
1. Plant (Gross)	$4,140	$3,946	194	4.9	1
2. Goodwill	23,813	23,813	0	0	2
3. Investments in Associated Companies	262	188	74	39.4	3
4. Patents	423	421	2	.5	4
5. Merchandise	1,699	1,871	(172)	(9.2)	5
6. Notes Receivable	1	0	1	....	6
7. Accounts Receivable	344	306	38	12.4	7
8. Marketable Securities	677	785	(108)	(13.8)	8
9. Cash	455	334	121	36.2	9
10. Total assets	31,814	31,664	150	.5	10
11. Common Stock	1,500	1,500	0	0	11
12. Current Liabilities	279	512	(233)	(45.5)	12
13. Reserve for Depreciation of Plant	1,871	1,554	317	20.4	13
14. Reserve for Depreciation of Patents	244	207	37	17.9	14
15. Surplus	4,107	4,078	29	.7	15
16. Capital Surplus	23,813	23,813	0	0	16
17. Total liabilities	31,814	31,664	150	.5	17

	e	f	g	h	
	1931	1930	Inc. of 1931 Over 1930	% Inc.	
18. Sales	$3,029	$9,540	(6,511)	(68.2)	18
19. Gross Profits	938	4,134	(3,196)	(77.3)	19
20. Other Income	(20)	115	(135)	(117.4)	20
21. Total	918	4,249	(3,331)	(78.4)	21
Expenses:					
22. Research and Patent Amortization	191	231	(40)	(17.3)	22
23. Administrative, Selling and Other Expense	501	1,029	(528)	(51.3)	23
24. Federal Taxes	47	342	(295)	(86.3)	24
25. Total expenses	739	1,602	(863)	(53.9)	25
26. Net Earnings	179	2,647	(2,468)	(93.2)	26
27. Interest Deductions	0	6	(6)	(100.0)	27
28. Net Earnings Available for Dividends	179	2,641	(2,462)	(93.2)	28
29. Dividend Requirements	150	1,873	(1,723)	(92.0)	29
30. Undivided Profits	29	768	(739)	(96.2)	30
			i	j	
Percentages: Relation to Sales of:			1931	1930	
31. Gross Profits			31.0	43.3	31
Expenses:					
32. Research and Patent Amortization			6.3	2.4	32
33. Administrative, Selling and Other Expense			16.5	10.8	33
34. Federal Taxes			1.6	3.6	34
35. Total Expenses			24.4	16.8	35
36. Net Profits on Sales			6.6	26.5	36
37. Earnings Per Share of Common Stock (Annual Basis)			$1.19	$17.12	37

Date Issued:—— —, 1932.

[fol. 4104] EXHIBIT D-56

Analysis of Average Investment in Operations, Bell Business, Years 1916-1930, Inclusive

(Dollars in Thousands)

Years	Plant	Merchandise	Receivables	Cash	Total Assets	Current Payables	Average Investment
1916	$16,282	$19,873	$11,527	$3,602	$51,284	$5,172	$46,112
1917	19,719	33,647	16,049	4,219	73,634	7,450	66,184
1918	21,525	34,883	15,562	3,619	75,589	4,904	70,685
1919	23,721	31,174	16,004	3,518	74,417	4,478	69,939
1920	29,996	47,908	22,755	5,550	106,209	7,295	98,914
1921	39,007	55,831	28,231	9,756	132,825	7,495	125,330
1922	44,476	48,001	29,242	11,573	133,292	10,203	123,089
1923	49,468	57,462	30,688	7,774	145,392	13,888	131,504
1924	58,190	70,914	39,561	8,671	177,336	18,848	158,488
1925	63,750	57,127	36,053	24,680	181,610	18,525	163,085
1926	68,783	56,214	42,841	4,387	172,225	11,970	160,255
1927	75,769	60,108	36,418	6,041	178,336	10,965	167,371
1928	80,705	51,614	36,665	6,923	175,907	14,529	161,378
1929	95,046	74,386	50,215	8,817	228,464	23,957	204,507
1930	139,988	91,962	49,799	9,429	291,178	20,622	270,556
Total	826,425	791,104	461,610	118,559	2,197,698	180,301	2,017,397

[fol. 4105] EXHIBIT D-57

Copy

Gregory Exhibit No. 6

Ch'rman Hopple

No. 3307, Ohio Bell Case

Average Investment, Non-Bell Business, Years 1916-1930, Inclusive

(Dollars in Thousands)

	Plant	Merchandise	Receivables	Cash	Total Assets	Current Payables	Average Investment
1916	$4,196	$4,291	$5,221	$1,581	$15,289	$2,306	$12,983
1917	3,810	7,019	6,288	2,580	19,697	2,923	16,774
1918	5,389	10,941	8,685	1,489	26,504	3,399	23,105
1919	5,856	11,437	8,304	1,440	27,037	4,118	22,919
1920	5,037	12,814	11,795	2,101	31,747	5,190	26,557
1921	5,241	12,529	11,347	2,337	31,454	4,273	27,181
1922	4,738	6,771	8,301	2,087	21,897	4,643	17,254
1923	5,595	7,829	9,828	2,082	25,334	6,067	19,267
1924	6,434	9,480	9,388	1,723	27,025	6,593	20,432
1925	7,821	8,120	9,177	3,006	28,124	6,740	21,384
1926	7,283	3,868	2,077	246	13,474	1,107	12,367
1927	6,559	3,349	1,412	293	11,613	427	11,186
1928	10,455	2,804	2,410	474	16,143	941	15,202
1929	14,907	8,457	4,542	937	28,843	2,424	26,419
1930	11,085	5,580	2,918	684	20,267	1,469	18,798
Total	104,406	115,289	101,693	23,060	344,448	52,620	291,828

[fol. 4106] EXHIBIT D-61

Western Electric Company, Incorporated, General Accounting Department

Analysis of Profits on Business Other Than with Bell Telephone Companies from 1881 to 1927, Inclusive

1. Interest and Dividends received on Foreign Business 1881 to 1925 Inclusive		$24,563,000 (R)
2. Profit on Sale of International Western Electric Company, Incorporated at September 30, 1925		6,586,000 (S)
3. Net Profit on Sales to Foreign Customers for Export 1881 to 1927 Inclusive		4,367,000
4. Net Profits on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to the Graybar Electric Company, Inc., during 1926 and 1927		18,885,000 (S)
5. Royalties received on Vitaphone, Permalloy, Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	$2,127,000	
Less Specific Development and General Expenses Applicable to this Business	4,666,000	(2,539,000)
6. Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927		591,000
7. Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies		1,107,000
8. Revaluation to Increase the Stock of the Electrical Research Products Inc., on Books of Western Electric Company, Incorporated, due to:		
(a) The Electrical Research Products Inc., writing up value of Stock of its Subsidiary Companies (Northern Electric Company and Graybar Electric Company, Inc.) from Cost to Book Value	$4,680,000	
(b) Undistributed Current Earnings of Electrical Research Products Inc., for the year 1927	5,258,000(U)	9,938,000
Total		63,498,000 (V)

R. Includes special dividend received in 1925 amounting to $9,700,000.

S. After providing for Pension Liability to employees of International Western Electric Company, Incorporated and Graybar Electric Company, Inc.

U Actual earnings for 1927, $5,504,000.

V. Reclassified:

Manufacturing Profits	$10,468
Other	53,030
	63,498

[fol. 4107] DEF'T'S EX. D-62

Weco Corporation

Opening Balance Sheet, May 31, 1930

Assets:	
Notes receivable	$13,800,000.00
Cash	39,869.41
	$13,839,869.41
Liabilities:	
Capital	$1,000,000.00
Surplus	12,839,869.41
	$13,839,869.41

The Weco Corporation issued 100,000 shares of capital stock without par value to the Western Electric Company, Inc., receiving therefor on May 31, 1930, the following consideration:

Cash	$39,869.41
Demand promissory notes of E R P I bearing interest at 6% per annum endorsed by Western Electric Co., Inc., to Weco Corporation	$13,800,000.00
	$13,839,869.41

The Electrical Research Products, Inc., sold on June 1, 1930, the assets listed on the following sheet in exchange for the assets received by Weco Corporation from Western Electric Co., Inc.

[fol. 4108] DEF'T'S EX. D-63

Weco Corporation

Assets sold by E R P I to Weco:		
(a) 39,240 shares of Northern Electric Co., Ltd., Common Stock		$6,387,418.00
(b) 46,000 shares of Graybar Electric Co., Inc., Preferred Stock		4,600,000.00
(c) German war claim		1,258,785.58
(d) New Zealand war claim		200,000.00
(e) Deferred receivables		2,000,000.00
(f) N. C. Heisler open account		1.00
(g) N. C. Heisler stock account		93,846.16
(h) 100 shares of Western Electric Company, Limited (of Canada) capital stock		10,000.00
(i) Western Electric Company, Limited (Canada) open account		26,246.64
(k) Cash in Petrograd banks		1.00
(l) Accrued dividends:		
April and May, 1931:		
Northern Electric Co., Ltd.	$65,400.00	
Graybar Electric Co., Inc.	53,667.00	
Estimated additional dividend, Graybar Electric Co., Inc.	90,000.00	
		209,067.00
		$14,785,365.38
Less reserves against above assets:		
German war claim		$607,553.17
100% reserve against items (d, f, g, h, i and k)		330,094.80
Tax on Northern Electric Co., Ltd., accrued dividend		7,848.00
		$945,495.97
		$13,839,869.41

(Here follows side folio 4109)

EXHIBIT D-64

Average Investment compiled from
Consolidated Balance Sheets at Dec 31,
of Western Electric Co and Subsidiaries 1915 to 1930
(Dollars in thousands)

Def Ex D 64

Assets	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Plant	26840	28540	32762	37065	40584	48410	59006	63476	71354	8817
Investments (Stock & Advances)	14735	5580	3126	2179	2117	1830	3664	3790	4251	4[illegible]
Merchandise	20907	38205	51508	53673	55681	83232	70801	60505	77037	7778[illegible]
Receivables	18457	23980	30472	29141	37843	52803	48366	44519	53809	5544[illegible]
Marketable Securities	0	0	0	3959	2421	1253	833	166	108	1[illegible]
Cash	6414	6617	6937	7077	6824	9960	14780	13282	13932	1141[illegible]
War Damages	0	0	0	0	1635	504	594	573	343	384
Patents (Net)	22	0	0	0	0	580	438	419	294	162
Trustees Employees Bond Purchase Plan	0	0	0	0	0	1067	405	0	0	0
Good will (Teletype Co)	0	0	0	0	0	0	0	0	0	0
Total Assets	87457	102922	124805	133094	146605	199639	198946	186670	221126	23818[illegible]
Liabilities										
Capital Stock & Surplus	27603 ✓	28760 ✓	30067 ✓	30486 ✓	33895 ✓	34111 ✓	62123 ✓	79907 ✓	82944 ✓	8985[illegible]
Preferred Stock	15000	15000	30000	30000	30000	0	0	24679	24679	24679
Funded Debt	16412	16457	16420	16380	16337	44270	44843	1171	36068	36152
Notes Payable										
Trustee's Pension Fund	0	0	0	0	0	0	0	0	0	0
Other	16	5515	10610	12772	15711	43916	27609	12030	183	271
Other Current Liabilities	6742	15472	10783	11317	17390	17562	17824	21035	26628	27614
Reserve for Depreciation of Plant	15461	17117	20444	23712	26220	28367	33232	36253	40277	4758[illegible]
" for Employees Ben Pen Funds	1076	1078	1581	1734	1802	1807	1839	2082	2282	[illegible]
" for Self Insured Risks	0	0	0	0	0	0	0	0	0	0
" for Contingencies	5007	3521	4900	6643	5162	5978	7261	7219	5675	544[illegible]
Bills Receivable Trade Accept Discounted	0	0	0	0	0	1628	565	716	738	59[illegible]
Mortgages on Property	0	0	0	0	0	0	1650	1650	1650	1650
Total Liabilities	87457	102922	124805	133094	146605	199639	198946	186670	221126	23818[illegible]

Computation of Average Investment

1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Total
40584	48480	59006	63476	71354	88170	86185	92248	101425	108615	15320	189528	[illegible]
2117	1830	3664	3790	4251	4685	3419	4021	4206	11178	10151	12028	[illegible]
55181	83232	70801	60505	77037	77782	63147	68643	60585	68497	111205	101519	[illegible]
37843	52803	48366	44519	53809	55440	47601	49946	50420	61296	107023	66852	[illegible]
2421	1253	833	166	108	[illegible]	10261	30986	4258	5874	672	1645	[illegible]
6824	9960	14780	13282	13932	11413	23382	9383	7913	12878	16678	11319	[illegible]
1635	504	594	573	343	384	0	0	0	0	0	0	[illegible]
0	580	438	410	274	165	0	0	0	0	0	292	[illegible]
0	1067	405	0	0	0	0	0	0	0	0	0	[illegible]
0	0	0	0	0	0	0	0	0	0	0	23813	[illegible]
146605	199639	198946	186670	221126	238180	233995	255267	228887	268338	399235	406996	3432162
33895 ✓	26111 ✓	62123 ✓	79907 ✓	82944 ✓	89852 ✓	106084 ✓	114738 ✓	88876	114096	171708	193615	1310867
30000	0	0	24679	24679	24679	0	0	0	0	0	0	194037
16237	44270	44843	7171	36068	36152	35933	35841	35703	35674	35582	35486	[illegible]
0	0	0	0	0	0	0	0	4924	21025	26405	32530	84957
15791	43916	29609	12030	183	291	810	795	1073	1213	4277	32451	209882
17390	17562	17824	21035	26628	27614	28337	29065	25178	32856	46877	25801	360451
26220	28367	33232	36253	40277	47586	46027	51964	51572	62689	71787	84767	663487
1802	1807	1839	2082	2282	[illegible]	10491	15762	15193	630	848	441	[illegible]
0	0	0	0	0	0	0	134	248	125	137	184	[illegible]
5162	5978	7261	7219	5675	5447	6313	6970	0	0	1445	1526	73177
0	1628	565	716	738	594	0	0	0	0	1500	0	5743
0	0	1650	1650	1650	1650	0	0	0	0	145	195	10171
146605	199639	198946	186670	221126	238180	233995	255267	228887	268338	399235	406996	3432162 ✓
146605	199639	198946	186670	221126	238180	233995	255267	228887	268338	399235	406996	3432162 ✓
17390	17562	17824	21035	26628	27614	28337	29065	25178	32856	46877	25801	360451
129215	182077	181122	165635	194478	210566	205658	226202	203709	235402	352358	381195	3071651

Total Liabilities	87457	102922	124805	133094	146605	199639	198966	186672	221126	238180
Computation of Average Investment										
Consolidated Gross Assets	87457	102922	124805	133094	146605	199639	198966	186672	221126	238180
Consolidated Current Liabilities	6742	15472	10783	11317	17390	17562	17824	21035	26628	27614
Net Consolidated Investment	80715	87450	114022	121777	129215	182077	181122	165635	194498	210566
Previous Year Net Avg. Investment	-	80715	87450	114022	121777	129215	182077	181122	165635	194498
Total	-	168165	201472	235799	250992	311292	363199	346757	360133	405064
Average Total Consolidated Investment	-	84083	100736	117[illegible]	125496	155646	181600	173378	180067	202532
Western Electric Co Gross Assets	78754	90408	112668	118456	128489	188583	179801	168194	201433	212421
Western Electric Co Current Payables	6491	12334	9194	9710	14217	14565	15587	18615	22712	22272
Net Western Electric Co Investment	72263	78074	103474	108746	114272	174020	166214	149577	178721	190149
Average Western Electric Co Investment		75319	90774	106110	111507	144146	170117	157897	164150	184435
Subsidiaries Average over W.E. Co Investment		8764	9962	11791	13907	11500	11483	15481	15917	18097
Average W.E. Co Investment (Based 3 periods)		71561	89961	101992	100783	137063	166654	149451	157592	191669
Total Combined Average		80325	99923	113782	114[illegible]	148563	178137	164932	173509	[illegible]766

38094	146605	147634	198300	186673	221176	238180	200947	255367	228667	261356	399235	406994	3432162
11307	17390	17554	17624	21054	26648	27614	28337	29665	25178	32656	46877	25801	2604911
21777	139215	182777	181122	165635	174478	215566	215658	226202	203709	235462	352358	291192	3571651
19407	131777	129213	193677	161822	167237	194488	210566	205658	216202	203709	235462	350356	2690486
35777	250992	311272	263137	246757	261123	265064	416264	431960	429911	433191	587840	733553	5691457
17705	125434	155046	181620	173276	180167	202537	212112	215930	214456	219596	293920	366776	2840726
18456	128489	158553	179801	168194	201433	312421	216204	235792	213793	251731	373392	399302	3148560
9710	14217	14565	15857	18615	22717	22277	21686	22479	19709	27925	40577	29201	296471
18746	124272	174020	166235	147577	179721	179149	194724	212318	194123	223796	333915	358401	2552399
06110	111507	144146	170117	157897	164159	184435	172437	203521	203170	208909	278555	345558	2636707
11791	12907	11500	11483	15461	15917	18097	15675	12409	11716	10686	15366	20918	203819
01994	100783	137063	166624	149451	157572	191669	193661	207800	204257	209250	265395	353614	2651403
13752	114[illegible]	148563	176037	144932	171529	201766	203324	213219	196543	219206	300160	274[illegible]	[illegible]

[fol. 4110] EXHIBIT D-65

Where total assets on following summary disagree with total assets on each year's summary sheet, difference is explained on sheets filed under 1929 and 1930 tabs, or represents elimination of Goodwill of Graybar Co. (offsetting reduction in capital and surplus) or reserve for depreciation on patents excluded from liabilities and deducted from assets or some similar adjustment.

(Here follow side folios 4111 and 4112)

EXHIBIT D-66

Net Profits on Investment (Condensed) in Rep. #4

	1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		1925		1926	
W E Co before Subs Divs	3	705	4	416	5	051	7	052	8	077	10	116	9	236	10	080	14	506	16	074	16	432				
Undistributed Earnings of Subsidiaries																										
W E Co Int in Canadian		71		104		1		4		1		14						-		-		2		1		
Int W E Co.		-		-		1	137					638		240		96		68		604		2933		-		-
Int wholly owned subsidiaries		36		287								615								907		841		-		-
Telegraph	2.7%	201	5.4%	181	5.9	28	5.9	73	5.9	219	5.5	148	5.5	127	5.5	587	5.5	136		-		-				
Northern Electric	10.2%	218		106		223		236		39		225		57		251		247		218		301				
Mfg RR	12.8%	26		40		7		11		NIL		32		11		50		011		26		27				
Int Hudson Strip		-		-		-		-		-		7		-		-		-		-		-				
Electrical Development Corp		-				-		-		-				-		2		2		3		3				
Int Int Engineering Co		-		-		-		-		-				-								1283				
Electrical Research Products		-		-		-		-		-		-		-						-		-				
Int in Foreign Subsidiaries		-		-		-		-		-		-														
Western Corp		-		-				-		-				-												
Int Int Corp		-				-		-		-		-														
Totals	6	197	6	265	5	900	8	975	8	731	11	142	10	173	11	304	13	294	16	393	11	247				

Profits on Investment (Combined) as Reported

Ex 66

1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Total
5051	5052	8 77	10116	9236	10080	14506	16074	16432	19331	22023	31556	20298	196,057
1 1 0 8 0 2	CA 10 4 0 1 14	CA 10 4 0 2	CA 10 4 0 2	CA 10 4 0 2	–	–	2	1	–	36	–	–	
1137	638	240	962	682	604	2933	–	–	–	–	–	–	7723
	CA 10 4 0 1 0 1 615				907	841	–	–	–	–	–	–	
28	579 73	55 219	55 198	55 127	55 589	55 1136	–	–	–	–	–	–	818
223	236	39	225	57	257	247	292	301	231	257	378	89	2886
7	11	44	32	11	50	11	26	27	22	6	37	61	183
–	–	–	7	–	–	–	–	–	–	1	–	4	5
–	–	–	–	–	2	2	3	3	–	3	–	–	3
–	–	–	–	–				1283	60	501	–	–	1724
–	–	–	–	–	–	–	–	–	5504	5926	1349	11	12790
–	–	–	–	–	–	–	–	–	–	35	2130	58	2037
	–	–	–	–	–	–	–	–	–	–	–	268	268
–	–	–	–	–	–	–	–	–	–	–	–	550	550
5944	5925	8731	11420	10143	11304	17294	16393	11627	24942	28031	35376	20118	223,394

DEFENDANT'S EXHIBIT D-68

Consolidated Earnings of W.E. Co. and [illegible]

1916 - 1930

Def Ex D68

Total 1916-30 [illegible]

Total Combined net Profits of W.E. Co. & Subsidiaries as published 1 (sheet attached)		223,394
Automatic deficit charged against 1917 sydney earnings and also against W.E. Co. of Canada 1918 earnings	1	138
Interest applicable to 1914 & 1915 included in 1917 combined earnings	1	382
Loss of W.E. Co. Ltd of Canada in 1928 also charged ERP Inc earnings	1	136
Loss of Teletype Corp after dividends for 3 Mos 1930 taken as loss by W.E. Co in setting up reserve for impairment of Teletype Surplus	1	550
Undistributed profits of Northern Elec Co Ltd to May 31 1930 included in 1930 ERP Inc earnings as a profit on sale of W.E. Co	1	845
Profit in 1930 on sale of land between W.E. Co & MJRR	1	137
Portion of profit on sale of Intl W.E. Co applicable 1916-25		5,116
1925 Profits remaining from earnings revaluations at upon sale of W.E. Co.		3,696
Elimination of intercompany gross profits included in line 1 remaining on inventories		1750
Portion of credit to surplus upon cancelling Res. for Contingencies applicable to 1916-27 earnings		912
Offsetting interest accrued on Berlin notes, included in line 1, not collected 1920		205
Appropriation for E.B.T. of MJRR not deducted from line 1 (1924)		(20)
Charge to earnings 1927 special surplus adjustment		(150)
Adjustment of Graybar Pension Fund		699
Adjustment of ERP Inc		12
Revaluation of Haberstock Receivables (1925)		119
Total Consolidated Earnings 1916-30		231,083

4112

[fol. 4113]

EXHIBIT D-69

Patents Sold to and Licenses Purchased from A. T. & T. Co. by Western Electric Co., Inc., and Accounting Disposition 1916 to 1930 (U)

	Patents Sold					Accounting Disposition		
	Special Assignment Credited to Reserve for Contingencies	Annual Assignments Credited to				Licenses Purchased Annually Charged to		
		General Expense	Development Expense	Other Income	Total	Reserve for Contingencies	Development Expense	Total
1916	$.....	$.....	$.....	$.....	$.....	.....	$.....	$.....
1917	250,000	29,630	.....	.....	279,630	4,448	.....	4,448
1918	.....	.....	.....	.....	.....	.....	.....	.....
1919	22,000	10,925	.....	.....	32,925	5,300	.....	5,300
1920	.....	.....	16,675	.....	16,675	5,150	.....	5,150
1921	.....	.....	12,416	.....	12,416	.....	13,325	13,325
1922	.....	.....	23,510	.....	23,510	.....	17,440	17,440
1923	.....	.....	1,163	.....	1,163	.....	.....	.....
1924	.....	.....	43,501	.....	43,501	.....	7,675	7,675
1925	.....	.....	48,503	.....	48,503	.....	9,817	9,817
1926	.....	.....	51,804	.....	51,804	.....	33,489	33,489
1927	.....	.....	94,326	.....	94,326	.....	16,250	16,250
1928	.....	.....	73,913	.....	73,913	.....	11,775	11,775
1929	.....	.....	.....	85,568	85,568	.....	20,000	20,000
1930	.....	.....	.....	71,026	71,026	.....	55,424	55,424
	272,000	40,555	365,811	156,594	834,960	14,898	185,195	200,093

(U) Amounts received from A. T. & T. Co. for assignment of patents, and licenses paid to A. T. & T. Co. represent:
(a) In the case of patents purchased from outside sources, the actual amount paid for such patents.
(b) In the case of all other patents, the cost of taking out the patent, meaning thereby time spent by the respective patent departments plus patent office fees.

[fol. 4114] EXHIBIT D-70

This agreement made this 13th day of August, 1923, between Western Electric Company, Incorporated, a New York Corporation, hereinafter called the Western Company; and Stromberg-Carlson Telephone Manufacturing Company, a New York corporation, hereinafter called the Stromberg Company, witnesseth:

Whereas, the Stromberg Company has heretofore granted certain licenses to the Western Company under certain United States patents and applications for United States patents owned by the Stromberg Company; and the Stromberg Company has since acquired certain other United States patents and applications for United States patents, a list of which is hereto attached and marked "Schedule B, List of Stromberg Patents and Applications", said list being intended to be a complete list of all United States patents and applications for United States patents now owned by the Stromberg Company under which the Western Company is not already licensed; and

Whereas, the Western Company desires to acquire licenses under the patents and applications listed or intended to be listed in said "Schedule B and under all United States patents and applications for United States patents relating to automatic or semi-automatic telephone systems or apparatus which may during the next ten years be acquired by the Stromberg Company; and

Whereas, the Western Company is the owner of numerous United States patents and applications for United States patents relating to automatic and semi-automatic telephone systems and apparatus, among which are certain patents and applications set forth in a list attached hereto and marked "Schedule A, List of Western Patents and Applications"; and

Whereas, the Stromberg Company has heretofore developed in its laboratories a certain automatic telephone exchange system and apparatus, employing step-by-step progressively movable switches for selectors, connectors and other switching purposes, which system and apparatus have been exhibited to representatives of the Western Company and which the Western Company asserts to be covered by certain of the claims of the patents and applications listed in said "Schedule A", (which is intended to be

a complete list of all the Western Company's United States patents and applications for United States patents covering said system and apparatus heretofore developed by the Stromberg Company); and

Whereas, the Stromberg Company desires to acquire a license under the patents and applications of the Western [fol. 4115] Company, to such extent as may be necessary to enable it to make, use and sell (under the conditions and with the limitations hereinafter stated) systems and apparatus substantially the same as said system and apparatus heretofore developed by it, and to utilize the same inventions in further developing said system and apparatus; and

Whereas, certain types of switches and other features disclosed in said patents and applications involve inventions which are not necessary in systems and apparatus such as those developed and proposed to be developed by the Stromberg Company, which inventions are covered by other patents of the Western Company under which it is not intended that the Stromberg Company shall be licensed;

Now, therefore, in consideration of the licenses herein granted and the covenants and agreements herein contained, the parties hereto agree as follows:

1. The Western Company hereby grants to the Stromberg Company a non-exclusive license under all of the United States patents and applications for United States patents listed in said "Schedule A" and under all reissues and extensions of said patents, and under all patents (and reissues and extensions thereof) that may be issued upon said applications or upon divisions or renewals thereof, to make and to cause to be made for it and to use and sell automatic telephone exchange apparatus and systems in which the selectors, connectors and other switches are of the step-by-step progressively movable type, except, however, that no rights are herein granted *to* agreed to be granted to the Stromberg Company (1) to make, use or sell any automatic telephone systems or automatic telephone apparatus for exchanges of more than 10,000 lines capacity, or (2) to make, use or sell any such apparatus of whatever capacity for use in connection with the telephone system of the American Telephone and Telegraph Company or any of its present or future Associated Companies.

2. The Stromberg Company agrees to pay to the Western Company a royalty upon all telephone exchange apparatus for exchanges having a capacity of more than four hundred and ninety-nine (499) lines each, / which shall be used, sold, leased or otherwise furnished others, / by the Stromberg Company during the ten (10) years next succeeding the date of this contract under the license herein granted or agreed to be granted, at the following rates, based upon the gross selling price of said apparatus (or if furnished other-[fol. 4116] wise than by outright sale, upon the value of such apparatus as measured by its current selling price of similar apparatus) exclusive of installation charges:

Upon all telephone exchange apparatus having a capacity of five hundred (500) lines and over and less than one thousand (1,000) lines, two and one-half per cent (2½%);

Upon all telephone exchange apparatus having a capacity of one thousand (1,000) lines and over and less than five thousand (5,000) lines, five per cent (5%);

Upon all telephone exchange apparatus having a capacity of five thousand (5,000) lines and over and less than ten thousand (10,000) lines, ten per cent (10%);

Apparatus for telephone exchanges having a capacity of less than five hundred (500) lines shall not be subject to royalty.

In the case of additions to equipment initially furnished by the Stromberg Company under this license, such additional equipment shall be subject to royalty at the rate above fixed for exchanges of a size corresponding to the total capacity of the exchange in question, with such additional equipment included; that is to say, for example, if the Stromberg Company should sell an exchange of two thousand (2,000) lines capacity it would be subject to royalty of five per cent (5%). If the Stromberg Company should thereafter furnish additional equipment for an additional two thousand (2,000) lines capacity, this additional equipment would also be subject to a royalty of five per cent (5%) and if the Stromberg Company should thereafter again furnish additional equipment for adding one thousand five hundred (1,500) lines to such exchange thereby increasing its total capacity to five thousand five hundred (5,500) lines, the equipment for the last mentioned one thousand five hundred (1,500) lines would be subject to

a royalty of ten per cent (10%) but the royalty on the first two installations would not be increased.

3. The Stromberg Company agrees to make quarterly reports to the Western Company on or before the fifteenth day of January, April, July and October in each year, covering all telephone exchange equipment put into service by the Stromberg Company itself or furnished by it to others under this license for use during the three calendar [fol. 4117] months then last past, such reports to show the name of the purchaser or user of the apparatus, the location of the exchange and the gross selling price (or actual value, if furnished otherwise than by outright sale, such value to be measured by the current selling price of similar apparatus); and the Stromberg Company agrees to pay to the Western Company at the time of making each such report, the entire amount of royalty upon said apparatus so put into service or furnished to others during such three preceding calendar months. The Stromberg Company agrees to keep full and accurate records of all its operations under this license, which records shall be open to the inspection of the Western Company or its authorized representatives at all reasonable times.

For the purpose of determining whether or not apparatus furnished by the Stromberg Company has been sold or furnished within the term of ten (10) years referred to, the date of acceptance of the order by the Stromberg Company shall control; but royalty shall not be actually payable until the apparatus is billed or delivered to the customer.

4. The Stromberg Company hereby grants to the Western Company non-exclusive licenses under the patents and applications for patents listed in said annexed "Schedule B", and the Stromberg Company further agrees to grant to the Western Company licenses under all United States patents and applications for patents relating to automatic or semi-automatic telephone systems or apparatus which may be acquired (or in respect of which rights to grant licensee may be acquired) by the Stromberg Company at any time within ten (10) years from and after the date of this agreement. The licenses herein granted and agreed to be granted to the Western Company include the right to make and to cause to be made by others for it and to use and sell the

inventions and improvements covered by said United States patents and applications of the Stromberg Company, for the entire terms of the respective patents issued and to be issued, and said licenses are free of royalty and of every other condition, limitation or restriction. The Stromberg Company agrees to give immediate written notice to the Western Company as and when it shall hereafter acquire any United States patents or applications for United States patents in respect to which the Western Company shall be entitled to license hereunder.

[fol. 4118] 5. The licenses herein granted agreed to be granted by each of the parties to the other are only under patents and applications for patents in the United States of America, and no rights are herein granted or agreed to be granted under any patents of foreign countries, and the manufacture or sale of apparatus in the United States by either party shall imply no right to the purchaser to use said apparatus under any patents in foreign countries.

No rights are herein granted or agreed to be granted to the Stromberg Company under any patents or applications of the Western Company other than those recited in the annexed "Schedule A", and no rights are granted or agreed to be granted by either party to the other except as herein expressly stated.

6. Each of the parties hereto hereby releases and forever discharges the other party (and the Stromberg Company further releases and discharges the American Telephone and Telegraph Company and each and all of the associated companies of the latter) of and from all claims, demands and rights of action on account of any past infringement of patents; and each of the parties further releases all purchasers and users of apparatus heretofore furnished by the other party from all claims for infringement of patents by reason of the use or sale of any apparatus heretofore furnished by such other party; and each party hereby licenses the continued use of all apparatus heretofore furnished by the other party, and the Stromberg Company hereby licenses the continued use by the American Telephone and Telegraph Company and its several associated companies of any and all apparatus now installed or used by them or any of them.

7. This agreement and the rights and licenses herein granted and agreed to be granted shall be assignable by the parties hereto respectively to the successors to substantially their entire good will and business relating to telephone apparatus, but may not otherwise be assigned.

In witness whereof the parties hereto have caused this instrument to be executed by their proper officers, the day and year first above written.

Western Electric Company, Incorporated, by C. C. DuBois, President.

[fol. 4119] Attest: E. J. Moriarty, Secretary. Stromberg-Carlson Telephone Manufacturing Company, by Fred C. Goodwin, Vice-President. Attest: W. M. Angle, Secretary.

The undersigned American Telephone and Telegraph Company, a New York corporation, hereby consents to the execution and delivery of the foregoing license by Western Electric Company, Incorporated, and to the extent of its right, title and interest in, to or under the patents and applications for patents listed in "Schedule A" attached to said agreement, said American Telephone and Telegraph Company hereby joins in the granting of the license therein granted to the Stromberg-Carlson Telephone Manufacturing Company under said patents and applications.

American Telephone and Telegraph Company, by H. B. Thayer, President. Attest: James Robb, Ass't Secretary.

[fol. 4120] EXTRACTS FROM EXHIBIT D-71

Agreement made in duplicate this 2nd day of June, 1914, between Kellogg Switchboard & Supply Company, hereinafter called the Kellogg Company, and Western Electric Company, hereinafter called the Western Company, corporations of Illinois, witnesseth:

Whereas the Kellogg Company owns certain United States patents and applications for patents, or has the right to grant a license as herein expressed under said patents and the patents to be issued upon said applications, as enumerated in the list attached hereto and marked "Kellogg List"; and

Whereas the Western Company is also the owner of certain United States patents and applications for patents, and certain patents and applications of the respective parties are now involved in interference in the United States Patent Office; and

Whereas each of the parties hereto desires to avoid patent litigation with the other party and to manufacture, use and sell its apparatus, systems and devices without liability to the other for infringement,

Now, therefore, in consideration of the agreements herein contained and the payment to the Kellogg Company of the sum of Two Hundred and Fifty Thousand Dollars ($250,000), the receipt of which is hereby acknowledged the parties hereto agree as follows:

The Kellogg Company hereby grants and agrees to grant to the Western Company a license of the character defined in sections VII and VIII hereof under each and every United States patent, issued on applications filed prior to date hereof, (or upon reissues, divisions or renewals thereof), now owned or controlled by said Kellogg Company, or under which it has the right to grant a license, and under all patents that may be issued upon applications and upon reissues, divisions and renewals thereof now owned or controlled by it, or under which it has the right to grant licenses, in so far as said present and future patents relate to automatic or semi-automatic telephone system or apparatus, or automatic busy test or ringing systems, or har- [fol. 4121] monic party line systems, or to any kind of system or apparatus which the Western Company has prior to date hereof, made and sold, to the ends of the respective terms for which said patents are or may be granted, all of said patents and applications being intended to be included in the said Kellogg List, but if any are omitted they shall be added thereto as soon as the omission is discovered and whether added or not shall be deemed to be included within this license.

II

If the Kellogg Company shall hereafter acquire title to any other application or applications for United States patent filed prior to date hereof, or the title to or right to grant licenses under any United States patent or patents issued or to be issued on applications filed prior to date

hereof or on divisions, reissues or renewals thereof, relating to automatic or semi-automatic telephone systems or appartus, or automatic busy test or ringing systems, or harmonic party line systems, or relating to any kind of system or apparatus which the Western Company has prior to date hereof made and sold, the Kellogg Company shall immediately notify the Western Company thereof, and the Western Company shall, at its option, immediately be entitled to a license under any and all such patents, free of additional cost to said Western Company, except that if such patents or rights under the same are acquired by the Kellogg Company on the basis of royalty or other deferred payments based upon the use of the inventions covered thereby, or subject to any conditions as to the exercise of rights thereunder, the Western Company shall be entitled to licenses thereunder only on making or agreeing to make the same payments and complying or agreeing to comply with the same conditions.

* * * * * * *

IV

The Western Company hereby grants and agrees to grant to the Kellogg Company a license of the character defined in sections VII and VIII hereof under each and every United States patent, issued on applications filed prior to date hereof (or upon reissues, divisions or renewals thereof), now owned or controlled by said Western Company, or under which it has the right to grant a license, [fol. 4122] and under all patents that may be issued upon applications and upon reissues, divisions and renewals thereof now owned or controlled by it, or under which it has the right to grant licenses, in so far as said present and future patents relate to automatic or semi-automatic telephone systems or apparatus, or automatic busy test or ringing systems, or harmonic party line systems, or to any kind of system or apparatus which the Kellogg Company has prior to date hereof, made and sold, to the ends of the respective terms for which said patents are or may be granted.

* * * * * * *

V

If the Western Company shall hereafter acquire title to any other application or applications for United States patent filed prior to date hereof, or the title to or right to grant licenses under any United States Patent or patents issued or to be issued on applications filed prior to date hereof or on divisions, reissues or renewals thereof, relating to automatic or semi-automatic telephone systems or apparatus, or automatic busy test or ringing systems, or harmonic party line systems, or relating to any kind of system or apparatus which the Kellogg Company has prior to date hereof made and sold, the Western Company shall immediately notify the Kellogg Company thereof, and the Kellogg Company shall, at its option, immediately be entitled to a license under any and all such patents free of additional cost to said Kellogg Company, except that if such patents or rights under the same are acquired by the Western Company on the basis of royalty or other deferred payments based upon the use of the inventions covered thereby, or subject to any conditions as to the exercise of rights thereunder, the Kellogg Company shall be entitled to licenses thereunder only on making or agreeing to make the same payments and complying or agreeing to comply with the same conditions.

. . . . . .

VII

All of the Licenses granted and to be granted under this contract are and shall be non-exclusive and non-divisible, and shall cover the right to make, use and sell, except as specified in Section VIII hereof, throughout the United States and territories thereof for the life of the patents [fol. 4123] covered in this agreement; the sale of apparatus embodying or installed to operate in accordance with any inventions under which licenses are herein granted or to be granted shall carry with it an implied license to use and sell the apparatus so sold. This agreement and the licenses herein granted and agreed to be granted are and shall be assignable only as follows: If either party is succeeded in business by a third party not a party to this agreement, and said third party is the possessor of patents or appli-

cations filed prior to date hereof and relating to the classes of systems and apparatus covered by this contract under which patents or applications the other party to this agreement has no rights, the licenses granted hereunder to the party so succeeded in business shall be terminable at the option of said other party unless licenses similar in scope and territory to those herein granted under said patents and applications of said successor are offered within ninety days to said other party without cost or upon such royalty only as such successor must pay, and upon such offer being made by such successor this agreement and the licenses herein granted and agreed to be granted shall be assignable to such successor, and when so assigned all of the provisions of this agreement shall inure to the benefit of and be binding upon said successor. Except as above provided, this agreement and the licenses hereunder granted and to be granted are non-assignable and neither party may grant any sub-licenses or rights under patents or inventions of the other party.

VIII

The licenses herein granted and agreed to be granted by each of the parties to the other are subject to the limitation that neither party is licensed to copy exactly or substantially, in its commercial apparatus, the particular design or construction of the commercial switches and calling devices of the other party, and the licenses herein granted and agreed to be granted by the Western Company to the Kellogg Company are subject to the further limitation that the Kellogg Company is not licensed to make or sell systems of the so-called "rotary" and "panel" type such as have been developed by the Western Company, or any of the apparatus or circuits thereof, except in so far as features of such systems may be applicable to systems of other types, such for instance as the "step-by-step" system heretofore developed by the Kellogg Company, and except also that none of the limitations of this paragraph shall be construed to prevent either party from making, using or selling any type of apparatus or circuits heretofore developed by such party or shown or described in any of its existing [fol. 4124] patents or pending applications. Each of the parties hereto agrees to observe all the conditions and limitations of the licenses hereunder granted and to be granted

to such party, and shall be liable in damages to the other party for any use of patented inventions of such other party in violation of any such conditions or limitations. If, in any year the sales of the Kellogg Company of automatic and semi-automatic switching and switchboard apparatus and calling devices, employing an invention or inventions with reference to which it receives a license hereunder, shall exceed the sum of Five Hundred Thousand Dollars ($500,000), the overplus shall be subject to a fair an just royalty to be paid to the Western Company by the Kellog Company, and such royalty shall be assessed on a line or percentage basis, and shall be reasonable in amount considering the market price of such apparatus, and shall be fixed by the arbitrator or arbitrators. In reaching their decision the arbitrator or arbitrators shall take into consideration as one factor, the value of the inventions of the parties hereto at a valuation not less than their cost to either party, the decision of such arbitrator or a majority of said arbitrators shall be final as to amount per line or percentage, and said arbitrator or arbitrators shall set an aggregate amount to be ultimately paid, after which the royalties or percentage shall cease.

The Kellogg Company agrees to pay to the Western Company the entire amount of royalty found to be due by any decision of the arbitrators within thirty days of such decision.

* * * * * * *

The American Telephone and Telegraph Company, a corporation of New York, and The American Bell Telephone Company, a Massachusetts corporation, hereby assent to the execution of the above instrument by Western Electric Company, and they severally assume to the Kellogg Switchboard & Supply Company, obligations similar in all respects to those assumed by the Western Electric Company under said instrument, and severally grant licenses to the Kellogg Switchboard & Supply Company similar in all respects to those granted by the Western Company under all their patents and applications filed prior to date hereof upon the classes of systems and apparatus contemplated by said instrument in consideration of said Kellogg Company granting to said American Telephone and Telegraph Company and to The American Bell Telephone Company

the same licenses and assuming to them severally the same [fol. 4125] obligations as said Kellogg Company grants and assumes to the said Western Company as expressed in said above instrument, to which the said Kellogg Company hereby agrees, and hereby grants and agrees to grant to said The American Bell Telephone Company and to said American Telephone & Telegraph Company licenses similar in all respects to those in said above instrument granted or agreed to be granted by the Kellogg Company to the Western Company.

* * * * * * *

[fol. 4126] In addition to the portions of this contract, printed in full above, it contains, in substance, the following provisions:

Kellogg Company covenants that the licenses granted and agreed to be granted are free from adverse agreement, assignment, grant, mortgage or other incumbrances and are and will be free and clear of royalty and other payments except as expressed in the contract and it will indemnify Western and its vendees from adverse claims. (P. III) The Western makes a similar agreement with relations to the licenses by it to Kellogg (P. VI).

Each party agrees not to simulate the design or construction of the other's commercial apparatus in such a manner as will constitute unfair competition. If there shall be dispute with relation to such, it shall be submitted to arbitration (P. IX)..

Arbitration is provided for applicable to the entire contract (P. X). Parties will attempt to themselves settle interference as between them but in case of failure to do so, will submit the same to the patent office tribunals and may appeal not beyond the Commissioner of Patents. Kellogg will give notice to the Western of claimed interferences with patents licensed under contract. Western may participate in defense or defend entirely if Kellogg elects not to do so (P. XII).

Each party releases the other and their vendees from all claims arising from infringement of any patents of the one by the other.

[fo]. 4127] EXHIBIT D-72

Description of Western Electric Costs

1. General:

The fundamental elements of cost are:

1. Pay rolls.
2. Purchases.
3. Taxes.
4. Reserve for deferred payments.

By reason of the organization of the company's operations, the nature of the work done and the method of allocation and accounting followed, these fundmental elements of cost appear in different places under varying names in the process of building up the complete cost of sales, as illustrated by the accompanying chart. Capital charges in the form of interest and dividends are not included in the cost of sales.

2. Definition of primary costs and their grouping into assembled costs:

As shown by the chart, sales are made up of—

1. Complete cost of manufactured products.
2. Complete cost of purchased supplies.
3. Net profits.

Complete cost of manufactured products in turn is made up of—

1. Shop cost.
2. Installation cost. } (Apply to central office
3. Equipment specification cost. } equipment only.)
4. Development cost.
5. Distribution cost.
6. Less credits for interest received from operations.

Complete cost of purchased supplies comprises invoice cost of purchased supplies and their cost of distribution, less credits for interest received from operations.

These main elements making up the complete costs of sales in turn represent assemblies of primary costs which are briefly defined in the following paragraphs.

3. Shop cost:

Shop cost comprises all of the labor and other expenses of the Manufacturing Department in carrying out its function of manufacturing cable, apparatus and equipment.

Shop cost is made up of the following primary costs:

1. Direct Labor. Payments to employees who perform manufacturing and assembly operations which can be charged to running orders covering such operations.

2. Indirect Labor. Amounts paid to direct labor employees which cannot practically be charged to such running orders for manufacturing operations but which are distributed over all such orders by percentages applied to [fol. 4128] direct labor. Such payments include vacations, forced absences, overtime allowances, sickness and accident disability payments and accruals for service pension liability.

3. Raw Materials. Raw materials comprise that material used in the manufacture of the product which either becomes part of the finished article or waste normally resulting from manufacturing processes. Scrap value of such waste is deducted from the gross cost of materials.

4. Manufacturing Overhead. This comprises accruals for depreciation of plant and all administrative, clerical and other expenses of the Manufacturing Department which cannot be assessed directly to the cost of the order as expended, but are included in shop cost as loading.

4. Installation cost:

Installation cost comprises the expenditures of the Installation Department required to install central office equipment. It represents the assembly of the following primary costs:

1. Direct labor.
2. Indirect labor.
3. Installation materials.
4. Installation overhead.

In general, these elements of cost of installation work correspond to those defined in the previous section for manufacturing work.

5. Equipment specification cost:

Equipment specification cost represents the work of issuing in the form of specifications and drawings the engi-

neering requirements of the Telephone Companies and Bell Telephone Laboratories for a central office order in such a manner that the necessary manufacturing and installing information may be presented to the Manufacturing Department and Installation Divisions.

The cost of preparing these specifications and drawings is similarly made up of the following items:

1. Direct labor.
2. Indirect labor.
3. Equipment materials.
4. Equipment overhead.

(Note.—The cost of preparing standard or master specifications is included in development cost as standardization, as brought out in the following paragraph.)

6. Development cost:

Development cost comprises expenditures for—

1. Developing, designing and patenting prior to the initial manufacture.
2. Preparing and maintaining standard specifications and drawings covering central office equipment and circuits.
3. Patents purchased and royalties and license fees paid for use of patents.

[fol. 4129] Development cost includes:

a. Charges from the Bell Telephone Laboratories for development work.
b. Charges from the Installation Department for standardization. (See above.)
c. Expenditures by the Patent Department.

7. Distribution cost:

Distribution cost is made up of four elements:

1. Merchandise Expenses, which include all of the labor and other expenses of the Telephone Sales Department in receiving, storing and shipping both manufactured products and supplies purchased from others.

This includes the operating expenses of the General Merchandise Departments at Hawthorne, Kearny and Point Breeze and of 32 distributing warehouses throughout the

country. Packing and transportation charges are also included.

2. Purchasing expense, which represents the cost of purchasing both raw materials and purchased supplies.

3. General expense, which includes the expenses of the executive and administrative officers of the company and their staffs, such as the Legal, Accounting, Treasury, Personnel and Advertising.

4. Federal taxes.

Distribution cost is divided between—

a. Distribution cost of manufactured products.
b. Distribution cost of purchased supplies.

8. Interest received from operations (credit):

From the sum of the preceding elements of cost is deducted interest received from operations, in arriving at the complete cost of sales.

9. Aggregate cost and figured standard cost:

In the administration of its business and the determination of profits, the Western Electric Company makes use of—

a. Aggregate costs:

These are ascertained from the books for the various departments on which are recorded the actual expenditures for pay rolls, purchases and accruals for taxes, depreciation and other deferred payments. Such expenditures, adjusted for changes in inventories, give the aggregate cost of sales divided departmentally, such as shop, installation, development and distribution.

[fol. 4130] b. Figured standard cost:

To determine the figured standard cost of individual items produced, direct labor and material is charged by means of time and material tickets to running orders for similar operations or groups of operations, to which are added by means of loading rates such expenses as cannot practically be charged direct to the order. From the specification or manufacturing lay-out showing the operations required to produce a given article and from the operation cost determined from these running orders, is assembled

the figured standard cost of a particular product. Although necessarily differing for particular periods, the total of all figured standard costs will, over a period of years, equal the aggregate cost.

10. The allocation of cost of sales between Bell and Non-Bell Companies is determined as follows:

Manufactured Products

1. Shop cost:

The figured standard shop cost is shown on the Western Electric Co. copy of each bill rendered by the Merchandise Department to Distributing Houses for shipments to Bell customers and on copy of each bill to Non-Bell customers, and these summarized, furnish for each year the total figured shop costs for Bell and Non-Bell business. Any difference between such total figured shop cost and the total aggregate shop cost of manufactured products is added to or deducted from the figured shop cost on a pro-rata basis, fo obtain the aggregate cost of sales to Bell and Non-Bell customers. The adjustment to actual cost is not made for isolated items of Western Electric manufacture.

2. Installation and equipment specification costs:

Such costs are accumulated directly for each order of central office equipment and are included in cost of sales for Bell business or Non-Bell business, depending on which class of customer ordered the equipment.

3. Development cost:

Development expense is classified according to main classes of products and divided in proportion to the shop cost of each class of products sold to Bell and Non-Bell customers.

4. Distribution cost:

Distribution cost is divided between Bell and Non-Bell insofar as practical on the basis of time studies and estimates and the remainder assessed pro-rata to the shop cost of sales, except for Federal taxes which is divided on the basis of taxable profits on Bell and Non-Bell business.

5. Interest received from operations:

The source of such interest frequently determines whether it should be included under Bell or Non-Bell business. Other is divided pro-rata to the shop cost of sales, the same basis as used in assessing investment in cash, the source of practically all of the interest prorated.

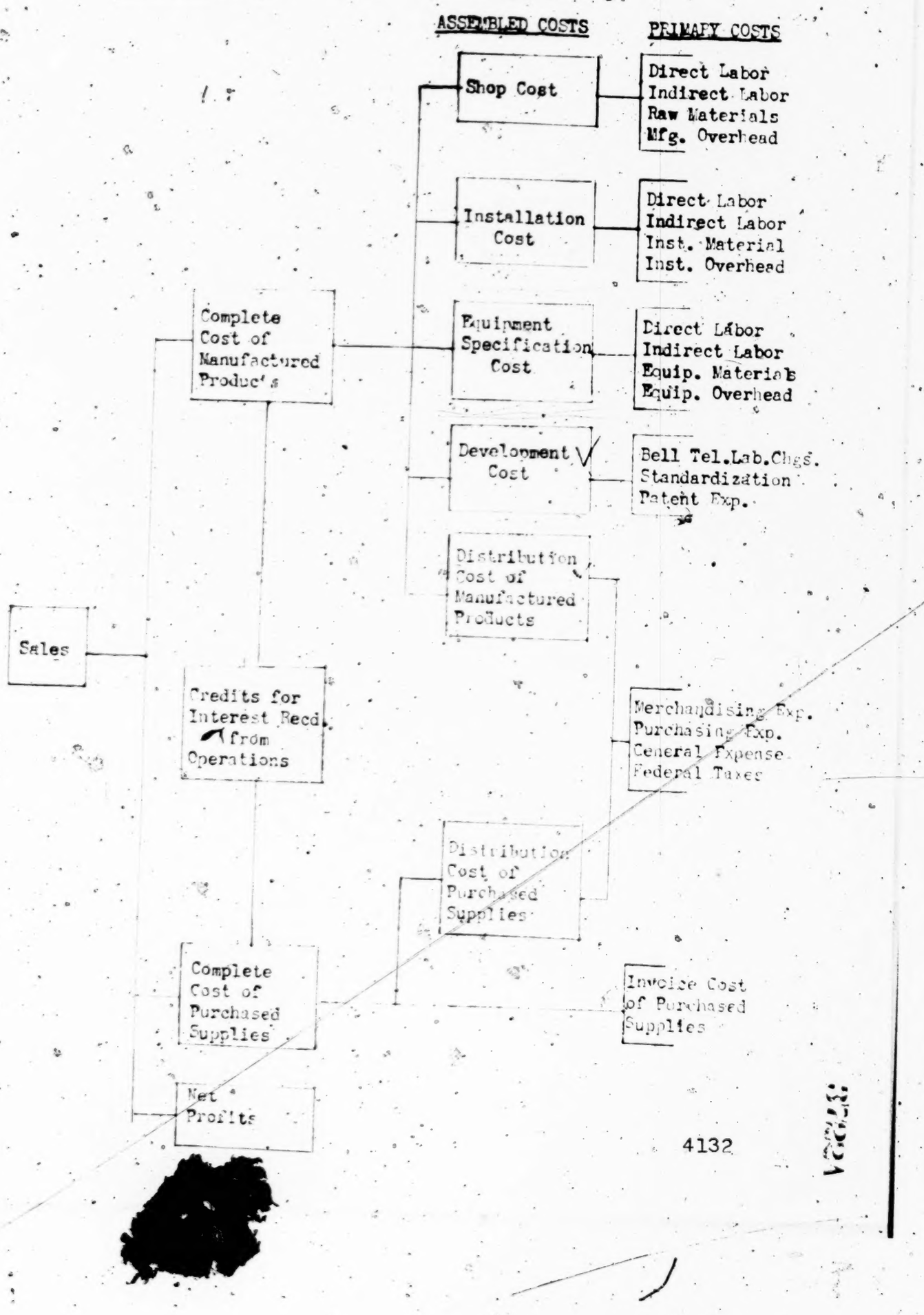
[fol. 4131] Purchased Supplies

6. To the known invoiced cost of sales to Bell and to Non-Bell customers is added the cost of distribution and deducted the interest received from operations, allocated between Bell and Non-Bell business in the manner described in section 4—Distribution Cost and Section 5—Interest Received from Operations.

(Here follows side folio 4132)

APPENDIX A

ANALYSIS OF WESTERN ELECTRIC SALES AND COSTS



[fol. 4133]

EXHIBIT D-73

Western Electric Company, Inc.

Investment in Products Company

On January 1, 1927, the Products Company was set up, at which time the following assets were transferred:

Investments:		
Graybar Company Stock	$6,699,000	
Northern Electric Company Stock	1,370,000	
W. E. Co. Limited of London Stock	1,000	
		$8,070,000
Marketable Securities:		
Liberty Bonds	$21,549,000	
U. S. Treasury Notes	4,452,000	
U. S. Treasury Notes	4,692,000	
		30,693,000
Cash		1,000,000
Accounts Receivable less Accrued Liabilities		1,299,000
		$41,062,000
Of this amount, capital was set up on the Products books of		1,000,000
And surplus was set up amounting to		40,062,000
During 1927 the Products Company earned		5,504,000
At December 31st the following revaluations were made increasing the value of the Products Company holdings in the Northern Electric Company and the Graybar Electric Company:		
On account of Graybar Electric Company	$1,800,000	
On account of Northern Electric Company	2,880,000	
		4,680,000
Total		$50,246,000
Out of this the following dividends were paid to the Western Electric Company:		
Regular dividend at $5.00 per share	$3,750,000	
Special dividend at $60.00 per share	45,000,000	
		48,750,000
Leaving a surplus at the end of 1927 on Products Company books of		$1,496,000
On the Western Electric Company books as of January 1, 1927, the investment in Products Company was carried at		41,062,000
As of December 31, 1927, this investment was revalued to represent 750,000 shares of common stock at $3.00 per share, or		2,250,000
Resulting in a charge to surplus on Western's books of		$38,812,000
This revaluation was arrived at as follows:		
Capital stock and surplus of the Products Company—1/1/27		41,062,000
Estimated earnings of the Products Company for 1927		5,258,000
Revaluation of Graybar and Northern Electric investments		4,680,000
Total		$51,000,000
Less dividends paid		48,750,000
Estimated value of capital stock and surplus on Products books at December 31, 1927		$2,250,000

Which was equivalent to $3.00 a share on 750,000 shares.

At December 31, 1928, the Western Electric Company's holdings in the Products Company were increased from $2,250,000 to $6,250,000, reflecting the revaluation made by the Products Company of their capital stock from $1,000,000 to $5,000,000 as of this date. The stock investment in the Electrical Research Products, Inc., is now carried on the books of the Western Electric Company at $6,250,000.

[fol. 4134] EXHIBIT D-74

Electrical Research Products, Inc., General Auditing Department

Monthly Report No. 1

Condensed Summary of Results for Years 1927 to 1930, Inclusive

(Dollars in Thousands)

	a Dec. 31, 1930	b Dec. 31, 1929	c Dec. 31, 1928	d Dec. 31, 1927	
Assets and Liabilities:					
1. Plant	$854	$690	$203	$45	1
2. Investments	10,170	19,675	10,597	12,761	2
3. Merchandise	6,992	6,941	4,501	1,203	3
4. Deferred Receivables	.....	3,905	4,729	3,000	4
5. Notes Receivable	1,069	18,701	2,720	1,082	5
6. Accounts Receivable	9,336	13,661	8,609	502	6
7. Cash	1,168	1,176	278	337	7
8. Total Assets	29,589	64,749	31,637	18,930	8
9. Capital (750,000 Shares No Par)	5,000	5,000	5,000	1,000	9
10. Current Liabilities — Western Electric Co., Inc	940	3,256	3,804	317	10
11. Other	1,161	1,818	4,168	886	11
12. Notes Payable—Western Electric Co., Inc	11,200	43,200	12,800	14,200	12
13. Pension Fund Trustee	458	238	76	8	13
14. Notes Receivable Discounted	.....	1,500	.....	.....	14
15. Reserves for Depreciation of Plant	838	519	107	18	15
16. Depreciation on Receivables	1,891	2,176	1,760	1,000	16
17. Contingencies	2,819	1,771	.....	.....	17
18. Employees' Benefit Fund	.....	.....	.....	5	18
19. Surplus and Undivided Profits	5,282	5,271	3,922	1,496	19
20. Total Liabilities	29,589	64,749	31,637	18,930	20

	e 1930	f 1929	g 1928	h 1927	
21. Operating Revenue	$28,438	$46,523	$17,257	$3,695	21
22. Profits from Operations	8,543	14,385	6,796	1,534	22
23. Profits from Investments	5,142	2,011	4,279	6,282	23
24. Total Gross Income	13,685	16,396	11,075	7,816	24
25. General Expense	5,785	3,549	1,488	571	25
26. Engineering Expense	1,871	3,050	1,366	880	26
27. Reserves	0	640	325	767	27
28. Federal Taxes	0	678	358	94	28
29. Total Expenses	7,656	7,917	3,537	2,312	29
30. Net Earnings Available for Interest and Dividends	6,029	8,479	7,538	5,504	30
31. Interest Deductions	1,518	1,880	674	0	31
32. Net Income Available for Dividends	4,511	6,599	6,864	5,504	32
33. Dividends ($6.00 per Share 1930, $7.00 per Share 1929, $1.25 per Share 1928, $5.00 per Share 1927)	4,500	5,250	938	3,750(A)	33

	e 1930	f 1929	g 1928	h 1927	
34. Undivided Profits	$11	$1,349	$5,926	$1,754	34
35. Average Investment	37,319	45,309	19,293	43,868	35
36. % Return on Investment	16.2	18.7	39.1	12.6	36
37. Net Income per Share of Stock	$6.01	$8.80	$9.15	$7.34	37

Contingent Liabilities to:	1930	1929
Chatham & Phenix Bank, New York	$3,875,000	.....
National City Bank, New York	300,000	.....
First National Bank, Boston	44,000	.....
Bankers Trust Company, New York	.....	975,937
	4,249,000	975,937

A Excludes special dividend of $45,000,000.

[fol. 4135]

EXHIBIT D-75

Analysis of E. R. P. Inc. Deferred Receivables for the Period 1927–1930

(Dollars in Thousands)

	Dec. 31, 1930	Dec. 31, 1929	Dec. 31, 1928	Dec. 31, 1927
1. Sale of Option to Purchase Stock of International Telephone Sales and Engineering Corporation	$	$2,500	$3,000	$3,000
2. German War Claim	.....	1,205	1,511	.....
3. New Zealand War Claim	.....	200	200	.....
4. Vienna "Special" Claim	.....	.....	18	.....
	.....	3,905	4,729	3,000

[fol. 4136] Analysis of Profits Received by Electrical Research Products, Inc., from its Subsidiaries Operating in Foreign Countries and from Northern Electric Company, Limited, 1927–1930, Inclusive

(Dollars in Thousands)

Dividends Received During—	
1927	$314
1928	261
1929	259
1930	3,539
Total Dividends Received	4,373
Profit Due to Write-up of Investment, 1927-1930	2,880
Total Profits	7,253

Total Analyzed

Dividends:	
1927. Northern Electric Company, Limited	314
1928. Northern Electric Company, Limited	261
1929. Northern Electric Company, Limited	259
1930. Northern Electric Company, Limited	163
Subsidiaries Operating in Foreign Countries:	
Western Electric Company, Limited (London)	2,681
Western Electric Company of Brazil	86

Western Electric Company (Australia), Limited	494
Western Electric Company of Asia	75
Western Electric Company Inc. of Cuba	55
Western Electric Company of Chile	30
Western Electric Company of Mexico	5
Total Dividends	4,373
Write-up of Investment in Northern Electric Company Limited	2,880
Total	7,253

[fol. 4137] Surplus and Profits of Electrical Research Products, Inc., for Four Years, 1927 to 1930, Inclusive

Surplus resulting from assets transferred to Products Company at time of its organization (January 1, 1927)	$40,062,000
1927:	
Net Profits	5,504,000
Revaluation of investment in Northern Electric Company	2,880,000
Revaluation of investment on Graybar Electric Company	1,800,000
Dividends paid	48,750,000
Surplus as of December 31, 1927	1,496,000
1928:	
Net Profits	6,864,000
Revaluation of investment in Graybar Electric Company at time of sale	500,000
Surplus transferred to capital through revaluation of capital stock	4,000,000
Dividends paid	938,000
Surplus as of December 31, 1928	3,922,000
1929:	
Net profits	6,599,000
Dividends Paid	5,250,000
Surplus as of December 31, 1929	5,271,000
1930:	
Net Profits	4,511,000
Dividends paid	4,500,000
Surplus as of December 31, 1930	5,282,000

[fol. 4138]

Electrical Research Products, Inc.

Statement of Loans by Western Electric Company, Incorporated, to Electrical Research Products, Inc.

Date of Borrowing	1927 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
12/31	$14,200,000	6/29		$500,000			
		8/23		400,000			
		12/31		3,000,000			
		10/ 1			$700,000		
		10/ 2			300,000		
		11,25			400,000		
		1/10					
		5/12				$800,000	
		5/31				400,000	
						7,700,000	
Total	$14,200,000			$3,900,000	$1,400,000	$8,900,000	
	1928						
8/11	$100,000	8/23		$100,000			
9/11	200,000	5/31				$200,000	
10/11	300,000	5/31				300,000	
11/30	300,000	5/31				300,000	
12/11	500,000	5/31				500,000	
12/22	300,000	5/31				300,000	
12/31	900,000	5/31				900,000	
Total	$2,600,000			$100,000		$2,500,000	

3727

]fol. 4139]

Electrical Research Products, Inc.

Statement of Loans by Western Electric Company, Incorporated, to Electrical Research Products, Inc.

Date of Borrowing	1929 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due 12/31/30
1/22	$500,000	5/31				$500,000	
1/31	1,000,000	5/31				1,000,000	
2/11	1,000,000	5/31				1,000,000	
2/23	400,000	5/31				400,000	
2/26	15,000,000	5/ 6				5,000,000	
		5/13				3,000,000	
		5/20				1,000,000	
		7/ 2				1,000,000	
		9/23				5,000,000	
2/28	500,000	5/28				500,000	
3/11	600,000	7/31				600,000	
3/22	900,000	7/31				400,000	
		8/11				500,000	
3/30	300,000	7/24				300,000	
4/30	500,000	8/11				500,000	
5/22	700,000	5/31				700,000	
5/31	600,000	9/ 5				500,000	
		10/30				100,000	
6/11	700,000	10/30				400,000	
		11/11				300,000	
6/22	600,000	11/22				500,000	
		11/29				100,000	
7/11	700,000	11/29				200,000	$500,000
7/22	600,000						600,000
7/31	300,000						300,000
11/30	500,000						500,000
12/11	200,000						200,000
12/23	700,000						700,000
12/30	1,300,000						1,300,000
12/31	4,200,000						4,200,000
Total	31,800,000					23,500,000	8,300,000

[fol. 4140]

Date of Borrowing	1930 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000						$500,000
1/31	100,000						100,000
2/11	100,000						100,000
6/30	300,000						300,000
9/30	300,000						300,000
12/31	1,600,000						1,600,000
Total	2,900,000						2,900,000
Grand Total	51,500,000			$4,000,000	$1,400,000	$34,900,000	11,200,000
Balance End of Year			$14,200,000	$12,800,000	$43,200,000	$11,200,000	

[fol. 4141] Payments Made by Graybar Electric Company, Inc.
to Electrical Research Products, Inc.
for Dividends and Retirement of Preferred Stock
January 1, 1927, to May 31, 1930 (U)
(Dollars in Thousands)

Dividends:	
1927	$1,800
1928	2,010
1929	1,501
1930 (5 Months 1930)	309 (U)
Total	5,620

Retirement of Preferred Stock:	Retirement	Balance at End of Year
1928	$ 0	$6,000
1929:		
March 30, 1929	200	
June 29, 1929	200	
September 30, 1929	400	
December 31, 1929	200	5,000
1930:		
March 31, 1930	400	4,600 (U)

(U) Investment by Electrical Research Products Inc. in preferred stock of Graybar Electric Company, Inc. was sold to Weco Corporation as of May 31, 1930 for $4,600,000.

[fol. 4142] Change in Investment of Electrical Research
Products, Inc., in Graybar Electric Company, Inc., 1927 to May 31, 1930 (U)
(Dollars in Thousands)

		Balance at End of Year
1927.		
1. 150,000 Shares of Graybar Electric Company, Inc. Common Stock Purchased from Western Electric Company, Incorporated	$6,700 (A)	
2. Revaluation of Investment in Graybar Electric Company, Inc. Common Stock at December 31, 1927	1,800	$8,500
1928.		
3. Revaluation of Investment in Graybar Electric Company, Inc. Stock at Time of Sale	500	9,000
4. Graybar Electric Company, Inc. was sold to Graybar Management Corporation at December 31, 1928 for $9,000,000 paid for		
In Cash	3,000	
In Preferred Stock	6,000	6,000
1929.		
5. Retirement of 10,000 Shares of Graybar Electric Company, Inc. Preferred Stock	1,000.	5,000
1930.		
6. Retirement of 4,000 Shares of Graybar Electric Company, Inc. Preferred Stock	400	4,600 (U)

U. Investment by Electrical Research Products Inc. in preferred stock of Graybar Electric Company, Inc. was sold to Weco Corporation as of May 31, 1930 for $4,600,000.

(A) Par value of investment	$15,000,000
Less reserve transfered from W. E. at time of sale	8,300,000
Net value	6,700,000

[fol. 4143] Extracts from Exhibit D-77
Western Electric Company, Incorporated
Statement of Surplus and Undivided Earnings for Years 1916 to 1930

	a	b	c	d	e	f	g	h	
Year Ending Dec. 31st	Total Earnings	Interest Paid on Bonds, Borrowings and Bond Discount	Dividends Paid: Common Stock	Dividends Paid: Preferred Stock	Balance Carried to Common Stock and Surplus (b—(c to e)	Adjustments to Capital Stock and surplus (Analyzed on Attached Statement)	Capital and surplus at End of Each Year (A)	
1915	$ 3,204,710	$ 880,094	$ 1,200,000	$	$ 224,616	$ 0	$25,229,032	1
1916	4,161,560	1,309,844	1,200,000	900,000	301,716	0	25,453,648	2
1917	5,050,849	1,540,528	1,500,000	1,350,000	210,321	0	25,755,364	3
1918	5,652,089	1,263,180	1,500,000	1,800,000	1,088,909	0	25,965,685	4
1919	5,277,414	4,037,645	1,500,000	345,000	894,769	30,000,000(B)	27,054,594	5
1920	10,166,337	5,842,340	3,000,000	0	823,997	0	57,949,453	6
1921	9,235,890	3,904,097	3,500,000	686,857	1,144,936	15,013,438(C)	58,773,450	7
1922	10,079,471	1,159,958	3,500,000	1,727,572	2,191,941	0	74,931,826	8
1923	14,505,857	4,378,927	5,000,000	1,727,572	3,399,358	0	77,123,767	9
1924	16,073,981	1,790,679	5,625,000	1,233,980	7,424,322	(39,012,864)(D)	80,523,125	10
1925	16,431,933	1,857,895	7,500,000	0	7,074,038	0	48,934,583	11
1926	19,330,174	1,982,757	7,500,000	0	9,856,417	(52,877,252)(E)	56,008,621	12
1927	22,023,282	2,315,393	11,250,000	0	8,457,889	(10,661,721)(F)	12,987,786	13
1928	31,555,774	4,560,528	23,500,000	0	3,495,246	277,745(G)	10,783,954	14
1929	20,297,612	4,672,773	23,250,000	0	(7,625,161)	0(H)	14,556,945	15
Grand Total	196,055,933	41,496,638	104,025,000	11,570,981	36,963,314	(57,260,564)	6,931,784	16
								17

[fol. 4144] A. For the Years 1916 to 1924 Inclusive, Capital and Surplus was stated as the book value of Outstanding Capital Stock. In 1925 Surplus Account was set up.

B. Represents:

200,000 shares of Common Stock issued at $180 per share	$36,000,000
Less Premium paid on the Redemption of 300,000 shares of Preferred Stock par $100 at $120 per share	6,000,000
	30,000,000
Plus Premium of $10 a share on 9 shares of Common Stock not subscribed to and sold to American Telephone and Telegraph Company at $190	90
Net adjustment 1920	30,000,090

C. Represents:

150,000 shares of Common Stock issued at $100 per share	15,000,000
Premium on Sale of 1,413 shares of Preferred Stock	13,438
Net adjustment 1922	15,013,438

D. Represents:

Special Dividend received from International Western Electric Company, Incorporated	9,700,000
Profit resulting from Sale of International Western Electric Company, Incorporated	6,255,096
	15,955,096
Less:	
Premium paid of $10 per share on Redemption of 246,796 shares of Preferred Stock	2,467,960
Stated Capital set up per Board of Directors	52,500,000
	54,967,960
Net adjustment 1925	39,012,864

E. Represents:

Reserve for Contingencies transferred to Surplus	6,824,710
Reserve against Bell Laboratories Notes transferred to Surplus	1,056,302
Adjustment for International Standard Electric Corporation Pension Reserve transferred to Surplus	330,154
Adjustment for Graybar Electric Company, Inc. Pension Reserve transferred to Surplus	373,152
Receipt of Special Dividend for Electrical Research Products Inc.	48,750,000
	57,334,318
Less:	
Revaluation of the Holdings in Electrical Research Products Inc.	38,811,570
Distribution of Special Dividend received from Electrical Research Products Inc.—Rate of $13.00 a share	48,750,000
Special Surplus Adjustment	150,000
Transfer of Surplus to Common Stock	22,500,000
	110,211,570
Net adjustment 1927	52,877,252

F. Represents:

Final adjustment to Graybar Pension Fund	$325,831
Adjustment for Electrical Research Products Inc. Pension Fund	12,448
Revaluation of holdings in Electrical Research Products Inc.	4,000,000
Funds received from the issue of 250,000 shares of Common Stock at $40 per share	10,000,000
	14,338,279
Less Transfer of Surplus to Common Stock	25,000,000
Net adjustment 1928	10,661,721

(Here follows side folio 4145)

[fol. 4145]

Western Electric Company, Incorporated, Subsidiary Companies

Percentage of Total Common Stock of Subsidiary Companies Directly Owned by Western Electric Company, Incorporated, at December 31st 1916–1930

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Western Electric Co., Ltd. of Canada	100.0%	100.0%	100.0%	.....	.....	.....	.....	.....	.....	100..0%	100.0%	.....	.....	.....	.....
Manufacturers' Junction Ry. Co	99.9	99.9	99.9	99.9%	99.9%	99.9%	99.9%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%
International Western Electric Co., Inc.	.....	.....	.....	100.0	100.0	100.0	100.0	100.0	100.0	.....	.....	.....	.....	.....	.....
395 Hudson St. Corp	.....	.....	.....	100.0	81.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
Electrical Discount Corp	.....	.....	.....	.....	.....	.....	100.0	100.0	100.0	.....	.....	.....	.....	.....	.....
Bell Telephone Laboratories, Inc	.....	.....	.....	.....	.....	.....	.....	.....	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Graybar Electric Co., Inc	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0	100.0	.....	.....	.....	.....
Western Electric Co., Ltd. (London)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0	100.0	100.0	.....	.....
Western Electric Co.,(Australia) Ltd.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0	100.0	100.0	100.0
Electrical Research Products Inc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0	100.0
Weco Realty Corp	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0
Weco Corp	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0
Teletype Corp	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0

Approximate Number of Majority Owned Companies of the Above Subsidiaries

Western Electric Co., Ltd. of Canada	6	6	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
International Western Electric Co., Inc.	.....	.....	.....	8	9	10	10	11	11	.....	.....	.....	.....	.....	.....
Graybar Electric Co., Inc	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....
Electrical Research Products Inc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	3	19	21
Weco Corp	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Teletype Corp	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2

[fol. 4146]

DEF'T'S. EX. D-78

Western Electric Company, Incorporated. Analysis of 1925 Cost of Sales

(Dollars in Thousands)

	Grand Total	Manufacturing Department	Installation Department	Sales Department (Including Supply Department)	Headquarters
Beginning Inventory	$67,953	$28,542	$371	$38,564	$476
Additions:					
Productive Labor:					
Direct	38,087	22,689	12,027	3,371	.....
Indirect	2,423	1,511	838	74	.....
Total	40,510	24,200	12,865	3,445	.....
Expenses (Manufacturing, Installation, Distributing, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	34,892	16,733	4,696	10,498	2,965
Depreciation of Plant	5,452	4,638	280	483	51
Taxes	4,629	896	13	841	2,879
Rent	2,668	299	249	1,655	465
Repairs					
Other	18,087	9,451	3,100	4,527	1,009
Total	65,728	32,017	8,338	18,004	7,369
Packing, Converting and Repairing, Junking, etc.	2,793	.....	.....	2,793	.....
Transportation Not Charged to Expense	7,554	.....	.....	7,554	.....
Development	9,744	466	805	517	7,956
Materials Purchased Less Process Scrap Sold	164,477	50,297	.....	112,926	1,254
Extraordinary Reserve Against Plant	2,168	.....	.....	.....	2,168
Addition to Employees' Benefit Fund	3,500	.....	.....	.....	3,500
Pension Fund Under Agreement with Graybar Electric Company, Inc.	1,400	.....	.....	.....	1,400
Total Beginning Inventory and Additions	365,827	135,522	22,379	183,803	24,123

DEF'T'S. EX. D-78—Continued

	Grand Total	Manufacturing Department	Installation Department	Sales Department (Including Supply Department)	Headquarters
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	$20,691	$13,158	$1,215	$2,342	$3,976
Operating Interest and Other Income Received	1,551	32	6	374	1,139
Unbilled Equipment Specifications and Installation Included in Receivables	956	.....	956	.....	.....
Inventory of Supply Department Sold to Graybar Electric Company, Inc.	4,490	.....	.....	4,490	.....
Ending Inventory	55,990	26,712	192	30,255	(1,169)*
Total Deductions	83,678	39,902	2,369	37,461	3,946
Net Cost of Sales	282,149	95,620	20,010	146,342	20,177

* Represents depreciation for overstocks applicable to total inventories, but placed on Headquarters' books.

Western Electric Company, Incorporated

Analysis of 1930 Cost of Sales

(Dollars in Thousands)

	Grand Total	Manufacturing Department	Installation Department	Telephone Sales Department	Headquarters
Beginning Inventory	$95,940	$51,414	$3,941	$40,435	$150
Additions:					
Productive Labor:					
Direct	73,323	42,354	25,358	5,611	0
Indirect	9,773	5,364	2,914	1,495	0
Total	83,096	47,718	28,272	7,106	0
Expenses (Manufacturing, Installation, Merchandising, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	51,967	34,733	3,532	9,808	3,894
Depreciation of Plant	13,136	12,239	250	583	64
Taxes	2,447	616	.....	304	1,527
Rent	2,828	698	247	1,230	653
Repairs	6,959	6,610	87	262	.....
Other	23,653	5,776	5,940	10,880	1,057
Total	100,990	60,672	10,056	23,067	7,195
Less Transportation in Selling Prices	2,573	.....	.....	2,573	.....
Total Excluding Transportation	98,417	60,672	10,056	20,494	7,195
Development	14,370	0	954	0	13,416
Materials Purchased Less Process Scrap Sold	161,752	71,685	.....	87,274	2,793
Total Transportation Billed	10,428	168	.....	10,260	.....
Total Beginning Inventory and Additions	464,003	231,657	43,223	165,569	23,554
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	27,893	22,783	1,454	3,423	233
Operating Interest Received	888	54	2	846	(14)
Ending Inventory	86,678	39,103	3,236	44,341	(2)
Total Deductions	115,459	61,940	4,692	48,610	217
Net Cost of Sales	348,544	169,717	38,531	116,959	23,337

[fol. 4148] EXHIBIT D-80

Statement Showing the Relation of Manufacturing Department Surplus to Standard Shop Output, 1921 to 1930

(Dollars in Thousands)

	Operating surplus	Per cent operating surplus of output	Current underrun (U)	Per cent current underrun of output	Total mfg. dept. surplus	Per cent manufacturing surplus of output
1921	$2,569	3.4	$5,044	6.6	$7,613	10.0
1922	322	.5	224	.4	546	.9
1923	3,057	3.7	(3,337)	(4.0)	(280)	(.3)
1924	(4,633)	(4.5)	(4,633)	(4.5)	(9,266)	(9.0)
1925	(1,900)	(2.2)	(8,147)	(9.5)	(10,047)	(11.7)
1926	7,054	6.2	(762)	(.7)	6,292	5.5
1927	(543)	(.5)	3,563	3.4	3,020	2.9
1928	2,675	2.3	5,084	4.4	7,759	6.7
1929	(2,238)	(1.2)	988	.5	(1,250)	(.7)
1930	(7,746)	(4.6)	5,192	3.1	(2,554)	(1.5)
Total 1921 to 1930, incl.	(1,383)	(.1)	3,216	.3	1,833	.2

U: Current underrun applicable to shop output.

[fol. 4149] DEF'T'S EX. D-81, ID.

Standard and Current Cost of Copper Bar and Lead Purchased by Manufacturing Department, 1918-1931

(Prices per Cwt. F. O. B. Factory)

	Copper Bar (a)		Lead	
	Standard cost	Average current cost	Standard cost	Average current cost
1918	....	....	$4.50	$7.45
1919	....	....	4.50	5.78
1920	....	....	4.50	7.92
1921	....	....	8.50	4.39
1922	....	....	5.00	5.50
1923	....	....	5.00	7.38
1924	$18.00	$13.33	5.00	7.92
1925	15.00	14.49	5.00	8.96
1926	15.00	14.22	8.00	8.42
1927	15.00	13.35	8.00	6.80
1928	15.00	14.81	8.00	6.30
1929	15.00	18.03	8.00	6.83
1930	15.00	13.85	8.00	5.60
1931	15.00	10.40	8.00	4.22

A. Prior to 1924, copper wire was purchased.

[fol. 4150] DEF'T'S EX. D-82, ID.

May 26, 1927.

Mr. H. L. Gary, Kansas City, Missouri.

DEAR MR. GARY: Referring to the memorandum of agreement this day made between International Telephone Sales

and Engineering Corporation and Electrical Research Products, Inc. providing for payment by the former to the latter of several amounts aggregating $4,000,000.00, I agree that in the event the results should not conform to expectations between now and December 31, 1930, I, or my successor, will, upon a proper showing of facts, give the matter fair consideration and reduce the amount from $4,000,000.00 to some intermediate figure not below $3,000,000.00. After December 31, 1930, however, no reduction in the basic amount will be considered.

In the event that such claim should be made and I am not then president of Electrical Research Products Inc. I obligate myself to see that this phase of the arrangement is carried out in good faith.

Yours very truly, (Signed) Edgar S. Bloom, President.

[fol. 4151] DE'F'TS EX. D-83, In.

Approximate Purchases from Certain Suppliers, 1916-1930 (A) (B)

(Dollars in Thousands)

	American Electrical Works	Automatic Electric Company	Kellogg Switchboard and Supply Company	Reliable Electric Company	Stromberg-Carlson Tel. Mfg. Company	Total
1916	186	.....	2	33	2	223
1917	361	9	2	38	14	424
1918	162	143	7	20	11	343
1919	154	417	27	61	53	712
1920	604	1,967	69	63	120	2,823
1921	344	4,660	61	33	827	5,925
1922	75	4,505	79	42	536	5,237
1923	224	4,170	474	60	947	5,875
1924	95	6,435	2,354	294	1,222	10,400
1925	46	7,555	1,302	260	1,709	10,872
1926	...	6,620	1,412	284	1,012	9,328
1927	...	4,442	1,445	280	758	6,925
1928	...	3,623	609	335	713	5,280
1929	70	4,804	1,473	693	1,189	8,229
1930	...	5,497	1,307	542	1,948	9,294
Total	2,321	54,847	10,623	3,038	11,061	81,890

(A) Excluding purchases of Western Electric contained apparatus where determinable.

(B) Purchases were made at agreed upon prices except in the case of purchases from Automatic Electric Company which were made on a cost plus basis.

[fol. 4152] DEFENDANT'S EXHIBIT D-84

Rented Area Leased July 1, 1929, and After at Manufacturing Locations

	Square Feet
July, 1929:	
430 Communipaw Ave., Jersey City	148,000
Warren, Newark and Wilsey Sts., Newark	46,000
43rd and Damen Ave., Chicago	150,000
Oct., 1929:	
620 So. Kilbourne Ave., Chicago	106,000
Nov., 1929:	
39th Place and Lincoln, Chicago	35,000
1201 Flushing Ave., Brooklyn	71,000
	556,000

Equivalent to approximately 13 acres.

Represents between 8% and 9% of total space at manufacturing locations as of 12-31-29.

[fol. 4153] DEF'T'S EX. D-85 ID.

Additions to Pension Fund in 1931

Charged to Costs	$2,791,000
Charged to Interest	1,748,000
	$4,539,000
Less Pensions Paid	197,000
Net Increase in Fund	$4,342,000

[fol. 4154] DEF'T's EX. D-86

Depreciation Expense Included in Cost of Plant Made, 1916 to 1931, Inclusive

(Dollars in Thousands)

	Plant made by Mfg. Dept. for Mfg. Dept.	Depreciation Expense Included in Cost of Plant Made
1916	962	48
1917	2,167	115
1918	2,021	91
1919	1,835	86
1920	3,287	171
1921	4,712	212
1922	3,177	127
1923	2,999	99
1924	4,830	169
1925	3,497	133
1926	3,562	114
1927	4,854	165
1928	5,326	239
1929	13,051	483
1930	9,728	447
1931	6,064	327
Total 1916-31	72,072	3,026
Total 1923-31	53,911	2,176

[fol. 4155] DEF'T's EX. D-87

Total 1929 Average Investment, Bell and Non-Bell Business, with Percentage Apportioned on Basis of Standard Cost of Sales

	Average Investment	Percentage Apportioned on Cost of Soles Basis of Standard
Plant	$109,953,000	96%
Merchandise	82,843,000	72%
Receivables	54,757,000	5 (A)
Cash	9,754,000	97
Current Payables (Deduct)	26,381,000 (red)	76
	$230,926,000	68

(A) Apportioned on Basis of Sales.

[fol. 4156] DEF'T'S EX. D-88 ID.

Total 1929 Expenses and Operating Interest, Bell and Non-Bell Business, with Percentage Apportioned on Basis of Standard Cost of Sales

		Percentage Apportioned on Basis of Standard Cost of Sales
Development Expense	$11,024,000	100%
Merchandising and General Expenses	25,275,000	63
Federal Taxes	2,092,000	0
Total Expenses	$38,391,000	70%
Operating Interest	883,000	20

[fol. 4157] DEF'T'S EX. D-89

Resolutions of Board of Directors Authorizing Extraordinary Depreciation

March 17, 1925.—"Resolved that there be and hereby is appropriated from the profits of 1924 the amount of $1562339 for an extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works."

March 12, 1926.—"Resolved that there be and hereby is appropriated from the profits of 1925 the amount of $2167759 for an extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works."

March 1, 1927.—"Resolved that the action of the officers in setting aside $2101855 as extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works be and is hereby approved."

February 21, 1928.—"Resolved that the action of the officers in setting aside $1803103 as extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works be and is hereby approved."

[fol. 4158] EXTRACTS FROM EXHIBIT D-90

March 3, 1927.

Extraordinary Depreciation on Plant

It is recommended that an extraordinary depreciation reserve on plant be made in 1926 in the amount of $2,101,855 and charged to Profit and Loss. This amount is arrived at as follows:

1. Hawthorne:

A. Buildings and Permanent Fixtures $448,588

Mr. Lincoln has estimated that the construction cost index figure for the ten years 1930-1939 will be 154 on the average, taking 1914 as 100. If we make an extraordinary depreciation reserve in 1926 to cover the excess construction cost in the particular years in which the actual cost exceeded 154 we would write off at Hawthorne $2,040,752 as follows:

	Buildings	Permanent fixtures	Total
1918	$3,174	$2,142	$5,316
1919	26,362	12,887	39,249
1920	563,822	166,152	729,974
1921	287,020	207,694	494,714
1922	37,944	26,064	64,008
1923	218,280	141,240	359,520
1924	98,802	139,788	238,590
1925	35,728	35,728	71,456
1926	23,310	14,615	37,925
	1,294,442	746,310	2,040,752

In addition to depreciation at regular rates we have, in the past, made extraordinary depreciation reserves in 1913 and in the war years covering amortization of excess costs, and in 1924 and 1925 for the large construction program of recent years carried on at a higher cost than it is believed would normally prevail.

If we apply this extraordinary depreciation reserve on buildings, $1,010,000, against the excess cost of construction as noted above, a further reserve of $284,442 is necessary to bring the construction cost in excess years down to the 154 index figure.

In the case of permanent fixtures, if we apply this extraordinary depreciation reserve, $582,164, against the excess cost of construction as noted above, a further reserve of $164,146 is necessary to bring the construction costs in excess years down to the 154 index figure.

I recommend, therefore, that an extraordinary reserve be made of $284,442 on buildings and $164,146 on permanent fixtures.

[fol. 4159] The attached statements show the reserve on buildings at Hawthorne as 47% of the face value at the end of 1926 as compared with

44% at the end of 1925;
41 at the end of 1915.

If the extraordinary reserve of $284,442 recommended above is made, the reserve on Hawthorne buildings at December 31, 1926 will be 50%.

The depreciation reserve on permanent fixtures at Hawthorne as shown on the attached statement, is 55% of the face value at the end of 1926 as compared with

51% at the end of 1925;
54 at the end of 1915.

If the extraordinary reserve of $164,146 recommended above in made, the reserve on Hawthorne permanent fixtures at December 31, 1926 will be 57%.

B. Machinery $227,318

Mr. Lincoln's study indicates that the machinery cost index of construction for the next ten years will average 171 taking 1914 as 100. If we make an extraordinary reserve in 1926 to cover the excess cost of construction in those years in which the cost exceeded the estimated average cost, it would mean writing off for

1919	$13,185
1920	446,661
1921	410,785
1922	164,346
1923	216,775
1924	386,750
1925	204,452
1926	265,754
	$2,108,708

The extraordinary depreciation reserve made in 1913 and the amortization of machinery in the war years and the extraordinary depreciation reserve made in 1924 and 1925 to revalue purchases of machinery in the years of high cost to an average cost level for the next ten years, then estimated to be 175, will take care of $1,881,390 of this amount, leaving $227,318 to be written off in 1926 and I recommend, therefore, that a reserve in this amount be made this year.

This would make the depreciation reserve on Hawthorne machinery 65% of the face value at the end of 1926. If this reserve is not made, the depreciation reserve would be 64% of the face value at the end of 1926 as compared with

63% at the end of 1925;
72 at the end of 1915.

[fol. 4160] 2. Kearny:

A. Buildings and Permanent Fixtures $1,125,494

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 168 on the average, taking 1914 as 100. If we make an extraordinary depreciation reserve in 1926 to cover the excess construction cost at Kearny, we would write off $2,760,494 as follows:

	Buildings	Permanent fixtures	Total
1923	$101,050	$25,585	$126,635
1924	934,510	226,452	1,160,962
1925	575,468	396,304	971,772
1926	329,160	171,965	501,125
	1,940,188	820,306	2,760,494

In 1925, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue the Kearny plant to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 170.

If we apply the extraordinary depreciation reserves on buildings and permanent fixtures made in 1924 and 1925 amounting to $1,169,000 and $466,000, respectively, against the excess cost of construction as noted above, a further reserve of $771,188 on buildings and $354,306 on permanent fixtures, a total of $1,125,494, is necessary to bring the construction cost in these years down to the 168 index.

I recommend, therefore, that an extraordinary reserve of $1,125,494 be made on buildings and permanent fixtures at Kearny.

The depreciation reserve on Kearny buildings and permanent fixtures at December 31, 1926 is 15% and 18%, respectively. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation, these rates will be 24% and 27%, respectively.

B. Machinery $300,455

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 171 taking 1914 as 100. On this basis, if we make a depreciation reserve to cover excess construction cost at Kearny, we would make an extraordinary depreciation reserve in 1926 amounting to $602,455 as follows:

1923	$109,765
1924	201,110
1925	143,306
1926	148,274
	602,455

In 1925, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue Kearny machinery to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 175.

[fol. 4161] If we apply this extraordinary depreciation reserve made in 1924 and 1925 on machinery amounting to $302,000 against the excess cost of construction as noted above, a further reserve of $300,455 is necessary to bring the construction cost in excess years down to the 171 index.

I recommend, therefore, that an extraordinary reserve of $300,455 be made on machinery at Kearny.

The depreciation reserve on Kearny machinery at December 31, 1926 is 23%. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation, this rate will be 30%.

The total extraordinary depreciation for 1926 as recommended above amounts to $2,101,855.

R. H. Gregory.

(Here follow side folios 4162-4182)

METHOD USED IN DETERMINING RECOMMENDATION FOR EXTRAORDINARY DEPRECIATION ON PERMANENT PLANT AT HAWTHORNE AND KEARNY OF $2,101,855 FOR THE YEAR 1926.

	a Total	b Buildings and Permanent Fixtures Hawthorne	c Kearny	d Machinery (Hawthorne & Kearny)	
1. Average cost indices as estimated by Mr. Lincoln for the ten years 1930 to 1939 inclusive (1914 = 100) - - -		154	168	171	1
Current cost indices for the year 1926 (1914 = 100) - - - - - - - - - - - -		189	215	208	2
2. Excess cost of plant additions for the years in which actual cost exceeded indices given above - - - - - - - -	$7,512,409	$2,040,752	2,760,494	2,711,163	3
3. Extraordinary depreciation reserves made in prior years in addition to depreciation charged to expense at regular rates - - - - - - - - - - -	5,410,554	1,692,164	1,655,000	2,183,390	4
4. Extraordinary reserve for depreciation on plant recommended to be made in 1926 (1 - 3) - - - - - - - - - - -	2,101,855	448,589	1,125,494	527,773	5
5. Total reserve for depreciation on plant before making 1926 extraordinary depreciation reserve at December 31, 1926 - - - - - - - - - - - - - -	23,795,504	9,546,666	2,082,357	12,166,281	6
6. Total reserve for depreciation on plant at December 31, 1926 after making 1926 extraordinary depreciation reserve - - - - - - - - - - - - -	25,897,159	9,990,254	3,207,851	12,834,054	7
7. Per cent depreciation reserve to face value of plant December 31, 1926. Including all extraordinary depreciation - - - - - - - - - - - - - -	34.1	41.3	.3	45.6	8
Excluding 1926 extraordinary depreciation - - - - - - - - - - - - - -	44.2	50.1	16.1	55.6	9
Including all extraordinary depreciation.					
December 31, 1926 - - - - - - - -	48.1	52.5	24.8	58.0	10
December 31, 1925 - - - - - - - -	44.0	46.8	17.6	54.7	11
December 31, 1924 - - - - - - - -	40.7	42.9	15.8	46.8	12
December 1, 19[illegible] - - - - - - - -	42.8	.7	.4	49.0	13

4162

estern Electric Company,
Incorporated
Lowers Accounting Department.

Date Issued Feb. 19, 1927.

T.I.A. 33 J.U.S.C. MEMORANDUM FOR EXTRAORDINARY DEPRECIATION

December 31, 1926.

	a	b	c	d	e	f	g
	Newport			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	Grand Total	
Balance Remaining at December 31, 1926 of Extraordinary Depreciation Charged to Reserve for Contingencies, December 31, 1913 - - - - - - - -	468,000	428,115	$177,496			$1,083,611	1
Extraordinary Depreciation on Hawthorne Books resulting from the writing back at December 31, 1924 of the Face Value of Additions in the Years 1917 to 1920 Inclusive - - - - - - - - -	424,874	127,173	332,161			884,208	2
If the write-off of the Face Value of Gross Additions in the Years 1917 to 1920 had not been made, Depreciation would have been accrued at Standard Rates up to December 31, 1924 amounted to - - - - - - - - - - - - - - - - - -	(81,458)	(47,084)	(158,617)			(286,163)	3
Extraordinary Depreciation written off to Profit and Loss at December 31, 1924 to Revalue Buildings, Permanent Fixtures and Machinery to Estimated Costs for the next Ten Years (J.E. 284) - - - - - - - - - - - - - - - - - - -		314,810	732,467	156,334	173,743	1,377,349	4
Additional Depreciation written off to Profit and Loss in 1924 for Faster Obsolescence on Machinery (J.E. 284) - - - - - - - - - - - - - -		185,190				185,190	5
Extraordinary Depreciation written off to Profit and Loss at December 31, 1925 to Revalue Buildings, Permanent Fixtures and Machinery to Estimated Costs for the next Ten Years (J.E. 280) - - - - - - - - - - - - - - - - - - -	302,018	0	1,084,180	446,547	335,000	1,167,754	6
Total Extraordinary Depreciation on Books at December 31, 1925 -	1,013,000	582,164	1,881,790	1,169,000	466,000	6,410,554	7
Total Extraordinary Depreciation Based on Studies to Revalue Plant to Estimated Cost Levels to Obtain for the next Ten Years 1930 - 1939 -	1,294,442	746,310	2,108,708	1,640,188	820,306	7,512,409	8
Extraordinary Depreciation to be written off at December 31, 1926 - - - - - - - - - - - - - -	284,442	164,146	227,318	771,188	354,306	2,101,855	9

( ) Indicate negative figures.

4163-

estern Electric Company,
Incorporated
eneral Accounting Department.

[illegible] Dec. 16, 1927

a	b	c	d	e	f	
Item	Additions	Actual Net Index (1913-1917)	Estimated Year Index	Per Cent Excess	Amount of Excess	
Warehouse Buildings.	1918	[illegible]	135	134	.6	[illegible].174	1
	1919	[illegible]	162	134	20.9	[illegible]	2
	1920	1,751,000	227	134	[illegible].2	560,822	3
	1921	1,270,000	199	134	[illegible].6	287,020	4
	1922	547,000	160	134	7.2	37,944	5
	1923	1,020,000	196	134	1.4	18,280	6
	1924	499,000	192	134	13.9	98,008	7
	1925	305,000	187	134	17.6	38,728	8
	1926	126,000	189	134	18.5	23,310	9
		6,463,000				1,394,442	10
Permanent Fixtures	1918	367,000	136	134	.6	2,142	11
	1919	260,000	162	134	4.9	12,857	12
	1920	816,000	227	134	[illegible].2	186,102	13
	1921	919,000	199	134	22.6	207,694	14
	1922	362,000	156	134	7.2	26,064	15
	1923	660,000	196	134	21.4	141,240	16
	1924	706,000	192	134	19.8	139,788	17
	1925	303,000	187	134	17.6	53,328	18
	1926	77,000	189	134	18.5	14,615	19
		4,300,000				746,410	20
Machinery- - - - -	1919	290,000	179	171	4.6	13,185	21
	1920	1,917,000	223	171	23.3	446,661	22
	1921	2,833,000(7)	200	171	14.5	410,785	23
	1922	1,911,000(7)	187	171	8.6	164,346	24
	1923	1,495,000	200	171	14.5	215,775	25
	1924	3,250,000	194	171	11.9	386,750	26
	1925	1,894,000(7)	203	171	15.8	304,452	27
	1926	1,421,000	208	171	17.8	252,754	28
		14,485,000				2,108,758	29
Tenny Buildings.- -	1923	470,000	214	168	21.5	101,030	30
	1924	4,135,000	217	168	22.6	934,510	31
	1925	4,051,000	207	168	18.8	675,468	32
	1926	1,960,000	214	168	21.4	329,160	33
		9,226,000				1,940,188	34
Permanent Fixtures	1923	119,000	14	168	1.5	23,086	35
	1924	1,002,000(7)	217	168	22.6	226,452	36
	1925	2,138,000	207	168	18.8	356,804	37
	1926	811,000	213	168	21.1	171,962	38
		4,064,000				822,306	39
Machinery- - - - -	1923	757,000	200	171	14.5	109,765	40
	1924	1,690,000	194	171	11.9	201,110	41
	1925	907,000	183	171	1[illegible]	143,000	42
	1926	853,000	98	171	17.8	148,274	43
		4,107,000				602,456	44

Ref. Mr. Lincoln's memorandum of October 14, 1926.
Ref. Mr. Lincoln's memorandum of November 11, 1926 and November [illegible], 1926.
[illegible] from [illegible]. Grounds of additions to [illegible] Mr. Martin's study.

4164

Revised Estimate of Future Machinery Cost Indices.

November 26, 1926

MR. T. K. STEVENSON:

As per our conversation, herewith final revised estimate of future machinery cost indices, which can be used for depreciation purposes in place of the indices furnished you under date of October 26, 1926. These are the same indices as originally furnished, but reduced on the assumption that over the next fifteen years there will be a 15 per cent increase in efficiency of productive labor used in the manufacture of the machinery which we make and purchase.

We are purposely on the low side in this estimate for depreciation purposes. I should not be surprised if a reconsideration of our estimates at any time during the next three or four years would make it appear that these future indices are running a little too low. However, I believe that we should stay put, as there is a good possibility that prices in general may fall more rapidly after 1930 than many of us now expect.

The new 10-year moving average index for machinery 1930-1939 is 171, as compared with 180 for the previous index. In view of heavy additions to machinery during 1926, I understand that this change will make possible an additional write-off of more than $900,000, which will be about $200,000 higher than the total future depreciation reserve already approved by the directors.

E. E. LINCOLN

MS
Att. 11/24/26

4165

It is recommended that an extraordinary depreciation reserve on plant be made in 1925 in the amount of $2,167,729 and charged to profit and loss. This amount is arrived at as follows:

1. [illegible]

A. Buildings and permanent fixtures - $209,018

Mr. Lincoln has estimated that the construction cost index figure for the next ten years will be 155 on the average, taking 1913 as 100. If we make an extraordinary depreciation reserve in 1925 to cover the excess construction cost in the particular years in which the actual cost exceeded 155 we would write off at least approximately $1,545,000 as follows:-

	Buildings	Permanent Fixtures	Total
1920 - - - - -	$ 505,000	$ 131,000	$ 636,000
1921 - - - - -	227,000	159,000	386,000
1922 - - - - -	7,000	5,000	12,000
1923 - - - - -	173,000	115,000	288,000
1924 - - - - -	75,000	102,000	177,000
1925 - - - - -	23,000	23,000	46,000
	1,010,000	535,000	1,545,000

In addition to depreciation at regular rates we have, in the past, made extraordinary depreciation reserves in 1913 and in the years covering amortization of excess costs.

If we apply these extraordinary depreciation reserves on buildings, $801,982, against the excess cost of construction as noted above, a further reserve of $209,018 is necessary to bring the construction cost in excess years down to the 155 index figure.

In the case of permanent fixtures, if we apply the extraordinary depreciation reserves, $582,104, against the excess cost of construction as noted above, the reserve would be [illegible],104 more than necessary to bring the construction costs in excess years down to the index figure.

I recommend, therefore, that on buildings, an extraordinary reserve of $209,018 be made and that on permanent fixtures no extraordinary reserve be made.

The attached statements show the reserve on building at the end of 1924 to be 42% of the face value at the end of 1925 as compared with

40% at the end of 1924
41% at the end of 1925

4166

- - -

f the extraordinary reserve of 209,018 recommended above is made, the reserve on Hawthorne buildings at December 31, 1925 will be 44 .

The depreciation reserve on permanent fixtures at Hawthorne as shown on the attached statement is 61 of the face value at the end of 1925 as compared with

48 at the end of 1924
54 at the end of 1915

B. Machinery - - -

	Buildings	Permanent Fixtures	Total
1923	$ 46,000	$ 19,000	$ 65,000
1924	709,000	177,000	886,000
1925	414,000	270,000	684,000
	1,169,000	466,000	1,635,000

In 1924, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue the Kearny plant to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 175.

If we apply these extraordinary depreciation reserves on buildings and permanent fixtures made in 1924 amounting to $732,463 and $156,334, respectively, against the excess cost of construction as noted above, a further reserve of $436,537 on buildings and $309,666 on permanent fixtures, a total of $746,203 is necessary to bring the construction cost in these years down to the 170 index.

I recommend, therefore, that an extraordinary reserve of $746,203 be made on buildings and permanent fixtures at Kearny.

The depreciation reserve on Kearny buildings and permanent fixtures at December 31, 1925 is 10% and 12%, respectively. If extraordinary depreciation is written off in 1925 in accordance with the above recommendation, these rates will be 16% and 21%, respectively.

B. Machinery - $ 128,259

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 175 taking 191[illegible] as 100. On this basis, if we make a depreciation reserve to cover excess construction cost at Kearny, we would make an extraordinary depreciation reserve in 1925 amounting to $302,000 as follows:

1923 - - - -	$ 42,000
1924 - - - -	229,000
1925 - - - -	31,000
	302,000

In 1924, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue Kearny machinery to the average cost level for the next ten years. The index figure for the next ten years was then estimated at [illegible].

4168

3746

If we apply this extraordinary depreciation reserve made in 1924 on machinery amounting to $173,742 against the excess cost of construction as noted above, a further reserve of $126,256 is necessary to bring the construction cost in excess years down to the 175 index.

I recommend, therefore, that an extraordinary reserve of $126,258 be made on machinery at Kearny.

The depreciation reserve on Kearny machinery at December 31,1925 is 17%. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation this rate will be 21%.

The total extraordinary depreciation for 1925 as recommended above amounts to - $ 2,167,755

R. W. GREGORY.

Western Electric Company, Incorporated

Engineering Department.

Date Issued Dec. 24, 1926.

Hawthorne — Kearny — As of December 31, 1925.

	a Hawthorne Buildings	b Hawthorne Permanent Fixtures	c Hawthorne Machinery	d Kearny Buildings	e Kearny Permanent Fixtures	f Kearny Machinery	
Balance remaining at Dec. 31, 1925 of extraordinary depreciation charged to Reserve for contingencies Dec. 31, 1915	$ 460,600	$ 488,111	$ 133,496	$ 0	$ 0	$ 0	1
Extraordinary depreciation resulting from the Writing Back at Dec. 31, 1924 of the Face Value of Gross Additions in the Years 1917 to 1920 Inclusive	424,834	137,133	321,241	0	0	0	2
Extraordinary depreciation written off at Dec. 31, 1924 to Revalue Buildings, Permanent Fixtures and Machinery to estimated Average Costs for the Next Ten Years	0	0	80,000.00 [1]	74,463	166,334	173,742	3
Total Extraordinary Depreciation at Dec. 31, 1925 (1 to 3)	885,434	625,244	535,737	732,463	166,334	173,742	4
Depreciation Reserve Accrued to Dec. 31, 1925 through the Application of Standard Normal Rates	4,172,991	2,982,381	8,422,520	58,619	230,502	410,424	5
Total Depreciation Reserve as of Dec. 31, 1925 (4 + 5)	5,058,425	3,607,625	8,958,257	791,082	396,836	584,166	6
Line 5 above	4,172,991	2,982,381	8,422,520	58,619	230,502	410,424	7
If the write off of the Face Value of Gross Additions in the years 1917 to 1920 (line 2 above) had not been made, depreciation would have been accrued at standard rates up to Dec. 31, 1925 amounting to	84,482	43,024	198,647	0	0	0	8
Total revised depreciation accrued to Dec. 31, 1925 at standard rates (7 + 3)	4,257,443	3,025,405	8,621,167	58,619	230,502	410,424	9
Total revised extraordinary depreciation as of Dec. 31, 1925 (4 - 8)	800,991	581,164	797,110	73,463	166,334	173,742	10
Total depreciation reserve as of Dec. 31, 1925 (checks with line 6)	5,058,425	3,607,599	8,958,257	791,082	396,836	584,166	11
Total Extraordinary Depreciation based on studies by Mr. [illegible] Lincoln to revalue Plant to the estimated cost levels to obtain for the next ten years	1,013,000	808,000	1,[illegible]1,100,000	806,000	806,000	806,000	12
Extraordinary Depreciation on books as of Dec. 31, 1925 (line 10)	800,991	581,164	796,110	73,463	166,334	173,742	13
Total Amount of Extraordinary Depreciation to be set on books as of Dec. 31, 1925 to meet the revised indices (12 - 13)	209,018	47,164	1,084,280	430,537	806,666	1[illegible]8,258	14
Total Hawthorne (line 14, col. a + b + c)	1,246,134						15
Total Kearny (line 14, col. d + e + f)	876,461						16
Grand Total (15 + 16)	2,120,595						17

4170

[1] Includes $185,190 additional depreciation written off in 1924 due to faster obsolescence of machinery.

Western Electric Company,
Incorporated
General Accounting Department.

[illegible]

Date Issued: Mar. 9, 1926.

[illegible]

[illegible]

	a	b	c	d	e	f	g	h	
	Additions (U)	Actual Cost Index	Estimated 10 Year Future Cost Index	Excess (b-c)	Per Cent Excess (d+b)	Amount of Excess (a x e)	Analysis of Excess: Buildings	Analysis of Excess: Permanent Fixtures	
1920	$2,304,068	214	155	59	27.6	636,000	505,000	131,000	1
1921	2,190,482	188	155	33	17.6	386,000	227,000	159,000	2
1922	903,245	157	156	2	1.3	12,000	7,000	5,000	3
1923	1,726,359	186	155	31	16.7	288,000	173,000	115,000	4
1924	1,229,066	181	155	26	14.4	177,000	75,000	102,000	5
1925	406,311	~~176~~ 177	155	20	11.4	46,000	23,000	23,000	6
						1,545,000	1,010,000	535,000	7
					MACHINERY				
1917	1,282,195	153	175	-					8
1918	954,318	164	175	-					9
1919	666,932	185	175	10	5.4	36,000			10
1920	1,999,568	217	175	42	19.4	388,000			11
1921	2,832,741	202	175	27	13.4	380,000			12
1922	1,911,140	192	175	17	8.9	170,000			13
1923	2,008,634	197	175	22	11.2	225,000			14
1924	2,967,387	~~198~~ 196	175	23	11.6	344,000			15
1925	1,317,147	~~198~~ 204	175	23	11.6	153,000			16
						1,696,000			17
					YEARNY				
					BUILDINGS AND PERMANENT FIXTURES				
1923	408,689(S)	202	170	32	15.8	65,000	46,000	19,000	18
1924	5,178,377(S)	205	170	35	17.1	886,000	709,000	177,000	19
1925	5,340,980(S)	195	170	25	12.8	684,000	414,000	270,000	20
						1,635,000	1,169,000	466,000	21
					MACHINERY				
1923	371,157	197	175	22	11.2	42,000			22
1924	1,972,657	~~198~~ 196	175	23	11.6	229,000			23
1925	264,124	~~198~~ 204	175	23	11.6	31,000			24
						302,000			25

(S) Excludes cost of bulkhead transferred to Grounds in 1925 as follows:

1923	$300,000
1924	322,000

(U) Additions represent the following:

Hawthorne	Gross Additions	On assumption that plant disposed of during period 1917 to 1925 was purchased in prior years when cost levels were not excessive.
Yearny Buildings and Permanent Fixtures	Net Additions	All plant was purchased during years of high cost levels.
Machinery	Net Additions	Excluding machinery transferred from Hawthorne which was included in Hawthorne gross additions.

4171

25

Machinery Cost Index, 1926-1935.

January 8, 1926

MR. T. K. STEVENSON:

We make no change in our estimate of the machinery cost index over the next 10 year period. The figure should stand at 175 for "Machinery Made and Purchased", in accordance with my memorandum of June 30, 1925, or 200 for "Machinery Made" only, as per my memoranda of February 25, 1925, and April 21, 1925.

We are trying to get estimates from the factory covering "Machinery Made and Purchased" during 1925. So far as we know, however, the 1925 index will be about the same as 1924.

E. E. LINCOLN

MS

26

Estimate of Building Construction Costs, Kearny and Hawthorne: 1925 and Next 10 Years.

December 28, 1925.

MR. T. K. STEVENSON:

Referring to your request, we have reviewed the estimates of building construction costs furnished under date of April 1, 1925, with the following results:

Our Hawthorne and Kearny indices for 1925 remain unchanged at 175 and 195 respectively (1913 = 100%).

Our estimate for 1926 is 170 for Hawthorne and 185 for Kearny — in each case a drop of 5 points from our earlier 1926 estimate.

For the 10 year period, 1926-1935, we now estimate an average of 155 for Hawthorne and 170 for Kearny. This is in each case a drop of 5 points from our earlier estimates for the period 1925-1934.

E. E. LINCOLN

4172

MS
Copy to Mr. R.H.Gregory.

27

Ten Year Estimate of Building Construction and Machinery Costs.

June 30, 1925

MR. T. K. STEVENSON:

As per your request we have carefully considered our earlier estimates of building construction and machinery costs for the next decade and see no good reason to modify our original figures, which are as follows:

Hawthorne	160 (1913 = 100%)
Kearny	175 " "
Machinery Costs Made & Purchased. .	175

The 10 year average machinery cost index of 200 given in my memorandum of April 21st was a mistake in copy, but I do not believe you made use of it in any way.

E. E. LINCOLN

ms

Copy to Mr. Gregory

Five Year Estimates of Building Construction and Machinery Costs. APR 22 A M.

28

MR. T. K. STEVENSON:

April 21, 1925

Replying to your request, we make the following estimates of building construction costs and machinery costs for the period 1925-29. These estimates are based on the same computations and assumptions which were supplied by us in previous reports in establishing 1924 excess depreciation write-off.

Five Year Estimates of Building Construction and Machinery Costs
(1913 = 100%)

	Building Construction Costs		Machinery Costs
	Hawthorne	Kearny	
1925	175	195	210
1926	175	190	210
1927	165	180	200
1928	160	175	195
1929	165	180	205
5 Year Average . .	168	184	204
10 Year Average (1925-1934) . .	160	175	200

E. E. LINCOLN

4173

MS

Copy to Mr. R.H.Gregory

29

Estimated Amount of Reserve to Cover Excess Cost of Machinery.

February 25, 1925

MR. T. K. STEVENSON:

On the basis of data now available, herewith the best estimate which we can make on the reserve which may properly be set up against the excess cost of our machinery during the next few years.

Until we can secure detailed information from Hawthorne it is impossible for us to know whether our annual estimates are consistent with the facts. However, we have checked carefully from different angles, and believe that our estimates are very conservative.

On the basis of our findings, we are certainly justified in setting up a reserve of at least $1,000,000.

E. E. LINCOLN

EE
Copy to Mr. Gregory
4

4174

It is recommended that an extraordinary depreciation reserve on plant be made in 19 4 in amount of 1,0 , 9 and current depreciation charges for the year. This amount is arrived at as follows:

1. Buildings and permanent fixtures

Mr. Lincoln has estimated that the construction cost index figure for the next ten years will be 150 on the average, taking 1913 as a basis. If we make an extraordinary depreciation reserve in 19.4 to cover the excess construction cost in the particular year in which the actual cost exceeded 150, we would write off at Hawthorne 1,2 ,4 as follows:

1920 - - - - - -	880,628
1921 - - - - - -	3.6,38
19.3 - - - - - -	41,090
19 4 - - - - - -	101,7 9

In addition to depreciation charges, above, in the past, we have extraordinary depreciation reserves in 1913 and in the war years covering amortization of excess construction cost.

If we apply the extraordinary depreciation reserves set up as above, 1,2 ,4 , we lost the excess cost of construction as noted above, the reserve will be 9 ,9 .7 more than necessary to bring the construction cost in excess years down to the 150 index figure.

I recommend, therefore, that on buildings and permanent fixtures at Hawthorne no extraordinary reserve be made this year.

By attached statements who the reserve on buildings at Hawthorne as 39.9 of the fair value at the end of 19 4, as compared with

 at the end of 19
 at the end of 19

permanent

[redacted]

the fair value at the end of 19 4
19 3
1 11

ordinary - - - - - -

[illegible] - - [illegible]

cost in those years in which the cost exceeded the [illegible] average cost it [illegible] [illegible] off for

1917 - - - - - - -	11[illegible],[illegible]
1920 - - - - - - -	2[illegible]7,93[illegible]
1921 - - - - - - -	[illegible]7,986
1923 - - - - - - -	9[illegible],414
1924 - - - - - - -	269,725
Total	848,741

The extraordinary depreciation reserve made in 1913 and the amortization of machinery in plant accounts in the war years will take care of $533,931 of this amount, leaving $314,810 to be written off in 1924.

I would increase the amount recommended as a result of Mr. Lincoln's study to $500,000, having in mind that changes in design of machinery are making a portion of our machinery out-of-date more quickly than in the past.

This would make a depreciation reserve at Hawthorne of 52% at the end of 1924.

2. KEARNY

A. Buildings and Permanent Fixtures - - - - - - - - - - - 888,797

In 1924 normal depreciation was written off for the plant items installed at the West Side, Waverly and Philadelphia Instrument Shops. No depreciation has been written off on the new construction at Kearny proper.

At the close of the year the building account showed a face value of - - - - - - - - - - - - - $5,065,485
permanent fixtures - - 1,153,581

Mr. Lincoln estimates that the average cost of construction at Kearny for the next ten years will be 175 as compared with the 1913 base. On this basis, if we make a depreciation reserve to bring the net value down to average estimated cost for the next ten years, we would make an extraordinary depreciation reserve in 1924 on buildings and permanent fixtures of 888,797

B. Machinery - 173,742

At the end of 1924 we have [illegible],500,512 in the machinery account at Kearny, which includes the machinery in storage for the new plant and in use at the Waverly, West Side and Philadelphia Shop Annexes. Normal depreciation has been written off on machinery in use.

4176

Mr. Lincoln estimates that the average machinery cost index for the next ten years will be 200, whereas in 1923 the index was 210, and in 1924 was 220.

A reserve for the excess cost would call for - - - - - - 173,742
in 1924, and the total reserve, including normal reserve on plant in use will be as follows:

	Face Value	Reserve	Per Cent
Buildings - - - -	$5,055,485	$732,463	14.5%
Permanent Fixtures	1,153,581	233,253	20.2
Machinery - - - -	2,500,512	344,329	13.8

R. H. GREGORY

	Bldg & P.F.	Machinery
	732,463	
	233,253	344,329
Tot required	165,716	170,587
Reglers' cap.	76,919	173,742
	888,897	

4177

February 10, 1925

MR. GREGORY:

Attached is a study made by Mr. Lincoln showing the gross additions made to plant in each year, 1915 to 1924, the index for construction cost for that year, and his estimate of the probable index for construction cost for the next ten years.

This indicates that all construction done prior to 1920 was done at a cost under that which would exist during the next ten years, but that the construction expenses in 1920, 1921, 1923 and 1924 were performed at higher levels than will be effective during the next ten years.

The supernormal cost in these years at Hawthorne amounts to $1,250,456, and at Kearny $897,651, a total of $2,148,107.

The amount that was written off the face of our plant in 1917 and 1918 cannot be considered as an offset to these amounts, because it was written off construction costs in years when the actual construction cost was lower than it is expected to be during the next ten years. On the other hand, it would seem perhaps somewhat illogical to write down the construction costs in 1920, 1921, 1923 and 1924 at Hawthorne to a 167% basis, and to permit the old entry writing off the costs of 1917, 1918 and 1919 to lower values than actual, which in turn is lower than the estimated future cost, to remain on our books.

The effect of this old entry is as follows:

Actual gross additions to buildings and permanent fixtures in 1917	$1,282,795
Construction index	144%
Amount written off the face	233,388
Amount actually included in the face of plant accounts for 1917 gross additions	1,049,407

This means that as a result of this entry 1917 gross additions are included in plant account at an index of 118%.

For 1918 the gross additions of $946,543 were reduced by an entry writing off the face $131,011, leaving the amount actually included in the plant account for this year's gross additions $815,532. The actual construction cost index for that year was 147%, but after having made this entry the gross additions for the year were included in plant account at a construction cost index of 127%.

In 1919 the matter was handled differently: a reserve was made for commitments amounting to $197,568, and therefore, although the gross additions show only $802,045, the real expenditures for plant in 1919 were $999,613, the actual cost index for the year being $153%, but the value at which they were included in plant accounts was, as a result of charging part of the cost to commitment reserve, only 123%.

It would seem, therefore, that if we make a new reserve writing off $2,148,107 extraordinary depreciation in accordance with Mr. Lincoln's study, we should, to be consistent, reverse the entry made in 1917 or 1918 and write onto our face the amount then written off, $561,967.

In making the above entries consideration should be given to the fact that depreciation has been charged off on the basis of the face as shown in our plant account.

JF

T. K. STEVENSON

Estimated Amount to be "Written Off" Buildings and Permanent Fixtures.

44

February 17, 1925

MR. T. K. STEVENSON:

Herewith our detailed computation showing the actual amount which we think it would be reasonable to write off the plant and permanent fixtures constructed at Hawthorne and Kearny during the past ten years. The total, according to this detailed computation, is $2,148,107.

Since our estimated cost of construction did not until 1920 reach a point above what we estimate will be the average cost over the next ten years, no adjustments have been made prior to that date.

I trust that this will serve your purposes.

E. E. LINCOLN

MS
Att.
Copy to Mr. R.H.Gregory

4180

ESTIMATED AMOUNT TO BE "WRITTEN OFF" BUILDINGS AND PERMANENT FIXTURES FOR HAWTHORNE AND KEARNY PLANTS DURING YEARS 1925-1934.

HAWTHORNE

Year	Gross Additions to Face Values of Buildings and Permanent Fixtures	Construction Cost Index (1913 = 100)	Estimated Construction Cost Index for Next Ten Years (1913 = 100)	Difference Between Estimated 10-Yr. Cost Index and Actual Cost Index	Per Cent of Gross Additions to be Written Off During 1925-1934.	Estimated Amt. To Be Written Off During Years 1925-34
1915	$ 157,968	97	160	-	-	-
1916	367,286	119	160	-	-	-
1917	1,282,795	144	160	-	-	-
1918	946,543	147	160	-	-	-
1919	802,045	153	160	-	-	-
1920	2,304,068	214	160	54	25.2	580,625
1921	2,190,482	188	160	28	14.9	326,382
1922	903,245	157	160	-	-	-
1923	1,726,359	186	160	26	14.0	241,690
1924	877,230	181	160	21	11.6	101,759
	$11,588,021	161	160		-	$1,250,456

Total Amount to be Written Off Plant and Fixtures in Ten Years Due to The Estimated Reduction in Building Costs - $1,250,456.

Per Cent of the Total Amount Written Off to Total Gross Additions to Face Values of Buildings and Permanent Fixtures - - - - - - - - - - - - - - - - 10.8%

KEARNY

1923	708,689	202	175	27	13.4	94,964
1924	5,497,855	205	175	30	14.6	802,687
	$6,206,544	203.5	175	-	-	$897,651

Total Amount to be Written Off Plant and Fixtures in Ten Years Due to The Estimated Reduction in Building Costs - $ 897,651

Per Cent of the Total Amount Written Off to Total Gross Additions to Face Values of Buildings and Permanent Fixtures - - - - - - - - - - - - - - - - 14.5%

GRAND TOTAL - - - - - - - - - - - - - - - -

46

Probable Decline in Cost of Factory Construction and Equipment during the Next Ten Years. (Hawthorne and Kearny)

February 16, 1925

MR. R. H. GREGORY:

Covering your request, it is our best judgment that within ten years the cost of constructing and equipping factory buildings such as our Hawthorne and Kearny plants should drop approximately 15 per cent from present levels, although the average annual cost of construction during the period may not be much more than 10 per cent below present levels.

Building construction costs remained practically stationary from 1913 to 1915 inclusive.

Beginning with 1916, net additions at Hawthorne, including permanent fixtures, amounted to $10,798,000. We estimate that the weighted average cost of this construction related to 1913 as a base year was 175 per cent.

Our construction at Kearny during the past two years, including permanent fixtures, has amounted to approximately $6,206,000. We estimate that the Kearny construction cost index related to 1913 as a base year is about 205 per cent.

The total amount of construction and permanent fixtures since 1916 in the two locations is approximately $17,000,000, with an estimated construction cost index of about 186 per cent related to 1913 as 100 per cent.

It is an ultra-conservative policy to set up reserves for problematical and gradual price declines. However, I think we can safely defend from 10 to 15 per cent of the face value, which would be from $1,700,000 to $2,550,000, and I would recommend that $2,000,000 is the best figure to use.

MS
Copy to Mr. T.K.Stevenson

E. E. L[illegible]

4182

[fol. 4183]

Copy

Estimated Amount to be "Written Off" Machinery for Hawthorne and Kearny Plants During Years 1925–1934

Hawthorne

Year	(a) Gross Additions to Face Values of Machinery	(b) Estimated Machinery Cost Index (1913 = 100)	(c) Est. Avg. Machinery Cost Index for Next Ten Years (1913 = 100)	(d) Difference Between Column (b) and Column (c)	(e) Per Cent of Gross Additions to be Written Off During 1925–1934	(f) Estimated Amt. to be Written Off During Years 1925–34
1915	$250,014	...	...	..	....	.....
1916	450,148	...	...	..	....	.....
1917	1,282,195	220	200	20	9.1	116,680
1918	954,318	200	200	..	....	.....
1919	666,932	200	200	..	....	.....
1920	1,999,568	235	200	35	14.9	297,936
1921	2,832,741	205	200	5	2.4	67,986
1922	1,911,140	185	200	..	....	.....
1923	2,008,634	210	200	10	4.8	96,414
1924	2,964,007	220	200	20	9.1	269,725
	$15,319,697	211	200		5.8	$848,741
Total Amount to be Written Off Machinery in Ten Years Due to the Estimated Reductionin Machinery Costs						$848,741

Kearny

1923	371,157	210	200	10	4.8	17,816
1924	1,930,000	220	200	20	9.1	175,630
	$2,301,157	218	200		8.4	$193,446
Total Amount to be Written Off Machinery in Ten Years Due to the Estimated Reduction in Machinery Costs						$193,446
Grand Total (Hawthorne and Kearny)						$1,042,187

VAF/JM.
2/25/25.

[fol. 4184]

Western Electric Company, Incorporated

General Accounting Department

Date Issued: —— —, ——

Study of Depreciation on Permanent Plant in the Manufacturing Department as of December 31, 1924

	a	b	c	d	e	f	
	Hawthorne			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	
Balance remaining at Dec. 31, 1924, of Extraordinary Depreciation charged to Reserve for Contingencies Dec. 31, 1913	$456,823	$491,892	$133,496	$ 0	$ 0	$ 0	1
Extraordinary Depreciation as of Dec. 31, 1924, offsetting the writing back of the amount written off the Face Value of Gross Additions in the years 1917 to 1920 inclusive	424,834.	137,133	322,241	0	0	0	2
Total Extraordinary Depreciation at Dec. 31, 1924 (1+2)	881,657	629,025	455,737	0	0	0	3
Depreciation Reserve accrued to Dec. 31, 1924, through the application of standard normal rates	3,785,855	2,726,621	7,335,152	0	76,919	170,587	4
Total Depreciation Reserve as of Dec. 31, 1924 (3+4)	4,667,512	3,355,646	7,790,889	0	76,919	170,587	5
Line 4 above	3,785,855	2,726,621	7,335,152	0	76,919	170,587	6

If the write off of the Face Value of Gross Additions in the years 1917 to 1920 (line 2 above) had not been made, depreciation would have been accrued at standard rates up to Dec. 31, 1924, amounting to	84,452	43,084	158,627	0	0	0	7
Total Revised Depreciation accrued to Dec. 31, 1924, at Standard Rates (6+7)	3,870,307	2,769,705	7,493,779	0	76,919	170,587	8
Total Revised Extraordinary Depreciation as of Dec. 31, 1924 (3+7)	797,205	585,941	297,110	0	0	0	9
Total Depreciation Reserve as of Dec. 31, 1924 (Checks with line 5)	4,667,512	3,355,646	7,790,889	0	76,919	170,587	10
Total Extraordinary Depreciation recommended by Mr. E. E. Lincoln to revalue plant to the estimated cost levels to obtain for the next ten years	831,158	419,298	848,741	732,463	165,188	193,446	11
Up to Dec. 31, 1924 Depreciation had been accrued, by the application of standard rates to Face Values in excess of levels to obtain for the next ten years, amounting to	110,844	62,453	236,821	0	8,854	19,704	12
Net amount of Extraordinary Depreciation needed to meet Mr. E. E. Lincoln's recommendation (11−12)	720,314	356,845	611,920	732,463	156,334	173,742	13
Extraordinary Depreciation on Books as of Dec. 31, 1924 (line 9)	797,205	585,941	297,110	0	0	0	14
Total Amount of Extraordinary Depreciation to be put on books as of Dec. 31, 1924, to meet Mr. E. E. Lincoln's recommendation (13−14)	76,891	229,096	314,810	732,463	156,334	173,742	15
Total Hawthorne (line 15, col. a+b+c)	8,823	.....	.....	.....	.....	.....	16
Total Kearny (line 15, col. d+e+f)	1,062,539	.....	.....	.....	.....	.....	17
Grand Total (16+17)	1,071,362	.....	.....	.....	.....	.....	18

[fol. 4185] EXTRACTS FROM EXHIBIT DEF'T'S EX. D-92

The Telephone Company as a Citizen of Your Community

An Address by F. O. Hale, President Illinois Bell Telephone Company, Before Mid-Day Luncheon Club, Springfield, Illinois, April 2, 1931

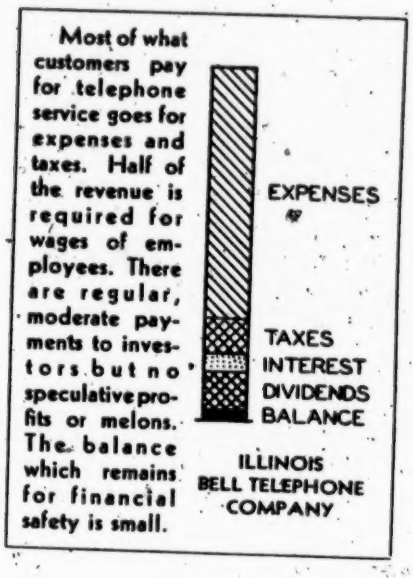
* * * * * * *

I wonder if it is generally realized that no great fortunes have ever been made out of the telephone business. If you should run over in your minds the names of the very wealthy men in America, you will not find on that list any men who acquired their fortunes through the telephone business. Executive heads of the Bell System have publicly stated on numerous occasions that the System does not seek speculative profits or melons; that the stockholders have the right to expect regular, moderate dividends only, with the right from time to time to make new investments on favorable terms. If the operations of the business yield more than is necessary for this, the excess must be put into improvements in the service or the rates reduced. Thus, any profits beyond those consistent with financial safety and a high grade service go to the users and not to the owners. These principles were adopted, not from altruistic or benevolent motives, but rather because they are in the interest of good business in the long run. To earn large or speculative profits would endanger the business. To earn less than safe returns would endanger the service, both present and future. It seems to us that this policy carries out our threefold obligation, and we believe that the public approves it.

* * * * * * *

(Here follows side folio 4186)

EXHIBIT D-92 37501



[fol. 4187] EXHIBIT D-93

February 27, 1932.

Total Expense on Radio to December 31, 1931

Year	Billed by R. T. L.	Incurred by D. & R.	Total
1910	$.....	$52	$52
1911	.....	269	269
1912	.....	765	765
1913	.....	793	793
1914	4,743	2,265	7,008
1915	34,381	19,601	53,982
1916	65,046	839	65,885
1917	32,893	16	32,909
1918	26,743 cr.	95	26,648 cr.
1919	226,627	567	227,194
1920	677,267	40,158	717,425
1921	388,066	39,967	428,033
1922	292,090	74,776	366,866
1923	289,470	115,032	404,502
1924	353,971	219,905	573,876
1925	441,507	309,711	751,218
1926	471,591	438,673	910,264
1927	808,168	272,770	1,080,938
1928	859,524	215,958	1,075,482
1929	1,284,974	356,641	1,641,615
1930	1,600,243	409,656	2,009,899
1931	887,571	299,944	1,187,515
Total	$8,691,389	$2,818,453	$11,509,842

[fol. 4188] EXTRACTS FROM EXHIBIT EXHIBIT D-94

Chart III

Department of Development and Research

Expense of Development Work for Year 1920 (including Western Electric Development Bills)

. . . . . .

Total expense for year 1920 ..... $2,596,429

[fol. 4189] EXTRACTS FROM EXHIBIT EXHIBIT D-95

Chart II

Western Electric Engineering Expense Chargeable to Department of Development and Research (incurred in 1921)

Comparison with Budget, December 31, 1921

	Cumulative 12 Mos.	Budget 1921
Grand total	$1,089,158	$1,165,000

[fol. 4190] EXTRACTS FROM EXHIBIT EXHIBIT D-96

Chart III

Western Electric Engineering Expense Billed to Department of Development and Research

Comparison with Budget for Year Ending December 31, 1922

	Total for Year	Budget 1922
Grand total	$1,021,057	$1,356,000

[fol. 4191] EXHIBIT D-97

Western Electric Company, Inc.

Number of Employees of Western Electric Company, Inc., 1916-1930

Year	Number of employees at January 1	Additions during year (Approximate)	Separations during year (Approximate)	Number of employees at December 31
1916	17,135	Not available	Not available	26,878
1917	26,878	Not available	Not available	30,737
1918	30,737	Not available	Not available	26,126
1919	26,126	19,611	18,153	27,584
1920	27,584	44,000	31,934	39,650
1921	39,650	44,422	38,829	45,243
1922	45,243	46,211	40,292	51,162
1923	51,162	68,602	55,956	63,808
1924	63,808	33,410	48,061	49,157
1925	43,922*	15,802	20,264	39,460
1926	39,460	29,121	23,471	45,110
1927	45,110	14,787	19,332	40,565
1928	40,565	31,813	16,054	56,324
1929	56,324	65,416	36,892	84,848
1930	84,848	17,253	37,848	64,253

* Excludes Supply and Engineering Departments.
(Copied from Company's Statement.)

[fol. 4192]

EXHIBIT D-98

No. 393

195 Broadway,
New York, N. Y., December 31, 1927.

American Telephone and Telegraph Company in Account With Illinois Bell Telephone Company, Mr. U. F. Cleveland, General Auditor, Chicago, Ill.

All Bills Payable in New York Funds.

Sale to you of telephone instruments charged your account at December 31, 1927, in accordance with terms set forth in President Gifford's letter dated November 17, 1927

(a)	65,510 Switchboard Receivers	at $1.44.....	$94,334.40
(b)	29,916 Switchboard Transmitters	" 1.73.....	51,754.68
(c)	28,934 Switchboard Induction Coils	" .68.....	19,675.12
(d)	1,321,610 Station Receivers	" .97.....	1,281,961.70
(e)	1,355,518 Station Transmitters	" 1.10.....	1,491,069.80
(f)	1,346,712 Station Induction Coils	" .38.....	511,750.56
(g)	6,810 Handsets	" 10.80.....	*73,548.00
(h)	Total		$3,524,094.26
(i)	Less credit adjustment.....		*26,559.00
(j)	Net amount due.....		$3,497,535.26

* The price for Handsets was based on current cost less 20% approximated at time sale agreement was made. Credit herewith is to adjust above prices to actual current cost less 20% as finally determined.

[fol. 4193]

EXHIBIT D-99

American Telephone and Telegraph Company

Prices Charged Licensee Companies for Instruments Based on Average Current Cost to American Tel. and Tel. Co. Less 20%

	Instruments Purchased by A. T. and T. Co. from W. E. Co. during Nine Months Ending Sept. 30, 1927				
	Number (1)	Cost (2)	Average Cost per Instrument (3)	20% of Average Cost (4)	Price Charged Licensee Companies (Col. 3) less (Col. 4) (5)
Switchboard:					
Receivers	51,784	$93,177.05	1.7993	$.3599	$1.44
Transmitters	15,302	33,032.54	2.1587	.4317	1.73
Induction Coils ..	14,801	12,517.93	.8457	.1691	.68
Station:					
Receivers	855,359	1,033,131.69	1.2078	.2416	.97
Transmitters	963,624	1,323,718.73	1.3737	.2747	1.10
Induction Coils ..	695,083	330,051.22	.4748	.0950	.38
Hand Sets.....	.....	.....	13.50	2.70	*6.90

* This price ($6.90) represents price at which billed to American Company less 20% further reduced by special adjustment.

(Here follows side folio 4194)

EXHIBIT D-100

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ANALYSIS OF RESERVE FOR DEPRECIATION OF TELEPHONE INSTRUMENTS

YEARS 1923 - 1927

Year	Reserve for Accrued Depreciation Beginning of Year (1)	Amount of Depreciation Charged Expense and Credited to Reserve (2)	Book Value of Instruments Retired (3)	Cost of Returning Instruments to Repair Shops for Salvage (4)	Salvage (5)	Net Charges to the Reserve (6)	Reserve f Accrued Depreciat End of Y (7)
1923	$14,236,028	$2,133,172	$ 960,283	$24,315	$ 322,435	$662,143	$15,707,0
1924	15,707,057	2,390,753	1,155,395	34,078	485,582	701,891	17,395,1
1925	17,395,919	2,648,084	1,342,691	44,858	474,308	913,241	19,130,1
1926	19,130,712	2,920,151	1,414,318	37,963	534,251	908,080	21,142,8
1927. (Transactions prior to sale of instruments)	21,142,833	3,150,992	1,411,025	15,076	478,181	947,920	23,345,8
Adjustments concurrent with and incidental to sale to licensee companies December 31:							
Instruments held by Western Electric Company to be repaired or salvaged, sold to that Company			651,078		370,569	x x x	x x x
Less - Adjustment of excess credit from Western Electric Company to American Tel. and Tel. Co. on instruments previously returned by licensee companies for repairs					252,282	x x x	x x x
Net adjustments			651,078		118,287	x x x	332,1
Balance as adjusted			x x x		x x x		22,815,1
Transferred to Long Lines Department at book value less depreciation accrued in reserve			35,893	(2)	18,165	x x x	17,7
Balance applicable to instruments sold to Licensee companies December 31			x x x		x x x		22,795,8
Sold to licensee companies December 31 at Average Current Cost less 20%			46,583,314	(1)	38,185,729	(3) x x x	8,380

EXHIBIT D-100

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ANALYSIS OF RESERVE FOR DEPRECIATION OF TELEPHONE INSTRUMENTS

YEARS 1923 - 1927

Year	Reserve for Accrued Depreciation Beginning of Year (1)	Amount of Depreciation Charged Expense and Credited to Reserve (2)	Book Value of Instruments Retired (3)	Cost of Returning Instruments to Repair Shops for Salvage (4)	Salvage (5)	Net Charges to the Reserve (6)	Reserve for Accrued Depreciation End of Year (7)
. . . . .	*$14,236,028	$2,133,172	$ 960,283	$24,315	$ 322,455	$662,143	$15,707,057
. . . . .	15,707,057	2,390,753	1,155,395	34,078	485,582	701,891	17,395,919
. . . . .	17,395,919	2,648,034	1,342,691	44,858	474,308	913,241	19,130,712
. . . . .	19,130,712	2,920,151	1,434,318	37,963	534,251	908,080	21,142,833
(Transactions prior to sale of instruments)	21,142,833	3,150,992	1,411,025	15,076	478,161	947,920	23,345,908
Adjustments concurrent with and incidental to sale to licensee companies, December 31:							
Instruments held by Western Electric Company to be repaired or salvaged, sold to that Company			651,078		370,369	x x x	x x x
Less - Adjustment of excess credit from Western Electric Company to American Tel. and Tel. Co. on instruments previously returned by licensee companies for repairs					252,282	x x x	x x x
Net adjustments			651,078		118,087	x x x	532,791
Balance as adjusted			x x x		x x x		22,815,116
Transferred to Long Lines Department at book value less depreciation accrued in reserve			35,893	(2)	18,165	x x x	17,728
Balance applicable to instruments sold to licensee companies December 31			x x x		x x x		22,793,388 (4)
Sold to licensee companies December 31 at Average Current Cost less 20%			46,588,314	(1)	38,185,727 (3)	x x x	8,399,587

Balance applicable to instruments sold to Licensee companies December 31	x x x		x x x		22,7
Sold to licensee companies December 31 at Average Current Cost less 20%	46,583,314	(1)	38,185,727 (2)	x x x	8,3
Balance	x x x		x x x	x x x	$14,3

* Includes $5,629,447 transferred from appropriated surplus in July, 1918.

July 6, 1931.

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e applicable to instruments sold to nsee companies December 31	x x x		x x x		22,793,386 (4)
to licensee companies December 31 at Average Current Cost less 20%	46,583,314	(1)	38,185,727 (3)	x x x	8,399,587
Balance	x x x		x x x	x x x	434,393,799 (5)

* Includes $5,629,447 transferred from appropriated surplus in July, 1942.

31.

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